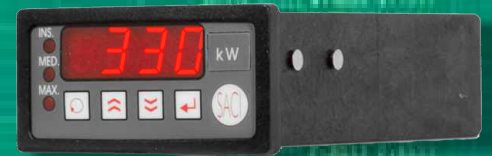




# DIGITAL INSTRUMENTS



# DIGITAL INSTRUMENTS

S.A. DE CONSTRUCCIONES INDUSTRIALES



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## GENERAL

- 3, 3½, 4 & 4½ Digits
- Direct Current (DC.)
- Alternating Current (AC.)
- Auxiliary power supply A.C.(110, 230 or 400 V)
- Auxiliary power supply D.C.(12, 24, 48,110 or 220 V)
- Universal auxiliary power supply AC. and DC. (45-275 V)

## DIMENSIONS

48x24, 72x24, 96x24 mm  
 72x36, 96x48 mm  
 48x48, 72x72, 96x96 mm  
 Din Rail 2 modules

## STANDARDS

<b>EN 60051</b>	Direct measuring equipment.
<b>EN 60068</b>	Environmental and vibration tests.
<b>EN 60801</b>	Electromagnetic compatibility.
<b>EN 61010</b>	Safety requirements for electrical equipment.
<b>EN 60529</b>	Casing protection class (IP Code).
<b>EN 61000</b>	Electromagnetic compatibility.
<b>UL 94</b>	Flammability test.
<b>IEC 664</b>	Insulation requirements.
<b>IEC 255</b>	Insulation test.

## TECHNICAL SPECIFICATIONS

Test Voltage	2 kV, 50 Hz, 1 min.
Impulse voltage strength test	5 kV, 1,2/50 µs.
Admissible overloads	
- Current input	
Standard	1,2 In continuously 2 In, 10 s.
Starting motors	2 In continuously 5 In, 10 s.
- Voltage input	1,2 Vn continuously 2 Vn, 10 s.
Measuring range	5-120% (4 digits) 0-120% (3, 3½ and 4½ digits)
Reference Temperature	23 °C ±1 °C
Operating Temperature	-10 °C to + 55 °C
Storage Temperature	-30 °C to + 70 °C

(\*) Other technical specifications on request.

## THREE-PHASE PROGRAMMABLE DIGITAL MULTIMETER 4 DIGITS DMP3

- 3 CURRENTS**
- 3 VOLTAGE Phase-Phase**
- 3 VOLTAGE Phase-Neutral**
- FREQUENCY**
- CURRENT and VOLTAGE INSULATED**



The DMP3 is a multimeter designed to measure current, voltage and frequency in a three-phase network, through the connection to current transformers. A five line of displays allows to represent simultaneously the three currents, one voltage and frequency.

### (\*) PRIMARY NOMINAL CURRENT

1, 5, 10, 15, 20, 25, 30, 40, 50, 70, 75, 80, 90, 100, 120, 125, 150, 160, 200, 250, 300, 400...  
500, 600, 700, 750, 800, 900, 1000, 1200, 1250, 1400, 1500, 1600, 1750, 1800, 2000, 2200...  
2250, 2400, 2500, 2750, 3000, 3500, 4000, 5000, 5500, 6000, 6500, 7000, 7500, 8000, 9000 A

### TECHNICAL FEATURES

Voltage	Max. 300 V phase-neutral. Max. 500 V phase-phase.
Burden	<1 VA
Frequency	10-100 Hz
Current	x/5 A (programmable) (*)
Burden	< 0,5 VA
Accuracy	0,5% Full range + 2 digits
Aux. V	230 V A.C. ± 20%
Burden	< 5 VA
Dimensions	DIN 96x96 mm
Display updating	3 times / sec (approx.)
Weight	0,5 kg
Terminals	Pluggable for maximum wire section of 2,5 mm <sup>2</sup>

### ENVIRONMENTAL CONDITIONS

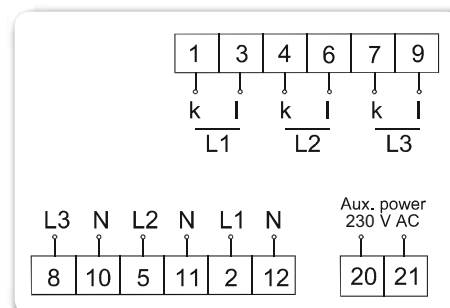
ENVIRONMENTAL CONDITIONS	
Storage	-25...70 °C, 75% HR.
Operation	-20... 55 °C, 85% HR.

### OPERATION

Display mode.

The display is provide with 4 keys: P , UP , DOWN and SB. The three currents are shown in the three displays on the left side, frequency is shown in the upper right display and voltage in the lower right display. Pressing SB key sequentially sets the voltage from, L1-L2-L3-L12-L23-L31.

### CONNECTION DIAGRAM



## PROGRAMMABLE/MULTIRANGE ALTERNATING CURRENT

Auxiliary voltage Supply: **UNIVERSAL (45-275) or STANDARD A.C./D.C.**  
**4 DIGITS**

Display: Red light, digit height 14,3 mm, high luminosity.  
 Max. Reading: 9999  
 Overrange: HHHH  
 Accuracy: 0,5% of reading  $\pm$  1 Digit  
 Auxiliary Voltage: UNIVERSAL (45-275 V) A.C./D.C.  
 Burden A.C. < 4 VA D.C. < 2 W  
 Auxiliary Voltage: UNIVERSAL (45-275 V) A.C./D.C.  
 Burden C.A. < 4 VA; D.C. < 2 W  
 Standard Auxiliary Voltage: A.C. 110, 230 or 400 V  $\pm$  20%  
 Burden < 3 VA  
 D.C. 12, 24, 48, 110 or 220 V  $\pm$  20%  
 Burden < 2 W  
 Temperature coefficient: 0,01% /  $^{\circ}$ C



### PROGRAMMABLE AMMETERS

ALTERNATING CURRENT		
MODEL (Dimensions)	DH5EM (48x48)	DP46EM (72x36)
	DH4EM (72x72)	DP35EM (96x48)
	DH3EM (96x96)	
PROGRAMMABLE RANGE		
Measuring range X/5 - X/1 A	1...9999 A Decimal point and display value selection using the front keys ▲ ▼	

### PROGRAMMABLE VOLTMETERS

ALTERNATING CURRENT		
MODEL (Dimensions)	DH5EM (48x48)	DP46EM (72x36)
	DH4EM (72x72)	DP35EM (96x48)
	DH3EM (96x96)	
PROGRAMMABLE RANGE		
Measuring range X/100 - X/110 V	1...9999 V or kV Decimal point and display value selection using the front keys ▲ ▼	

### DIRECT INPUT VOLTMETERS

ALTERNATING CURRENT		
MODEL (Dimensions)	DH5EM (48x48)	DP46EM (72x36)
	DH4EM (72x72)	DP35EM (96x48)
	DH3EM (96x96)	
DISPLAY		
Measuring range	500 V	

## PROGRAMMABLE/MULTIRANGE VOLTMETER-AMMETER ALTERNATING CURRENT Auxiliary voltage Supply: UNIVERSAL (45-275) 4 DIGITS

Display: Red light, digit height 14,3 mm, high luminosity.  
 Max. Reading: 9999  
 Overrange: HHHH  
 Accuracy: 0,5% of reading  $\pm$  1 Digit  
 Auxiliary Voltage: UNIVERSAL (45-275 V) A.C./D.C.  
 Burden A.C. < 4 VA D.C. < 2 W  
 Temperature coefficient: 0,01% / °C

**NEW**



DIGITAL INSTRUMENTS

### VOLTMETER-AMMETER

ALTERNATING CURRENT	
<b>MODEL</b> (Dimensions)	<b>DH3B</b> (96x96) <b>DP35B</b> (96x48) <b>DH4B</b> (72x72) <b>DP46B</b> (72x36)
<b>MEASURING RANGE</b>	<b>DISPLAY</b>
X/5 A	Programmable 1...9999 A
X/1 A	Decimal point and display value selection using the front keys ▲ ▼
500 V	No programmable

Digitata

## AMMETERS FOR STARTING MOTORS ALTERNATING CURRENT

**Auxiliary Voltage Supply: UNIVERSAL (45-275 V) or STANDARD A.C/D.C**  
**4 DIGITS**

Specially designed for installations where the starting current is several times the rated current.

Display:	Red light, digit height 14,3 mm, high luminosity. Models DH5EM, DP46EM, digit height 10,2 mm.
Max. Reading:	9999
Overrange indication:	HHHH
Accuracy:	0,5% of reading $\pm$ 1 Digit
Auxiliary Voltage:	UNIVERSAL (45-275 V) A.C./D.C. Burden C.A.< 4 VA; D.C.< 2 W
Standard Auxiliary Voltage:	A.C. 110, 230 or 400 V $\pm$ 20% Burden < 3 VA D.C 12, 24, 48, 110 or 220 V $\pm$ 20% Burden < 2 W
Temperature coefficient:	0,01% / °C



### PROGRAMMABLE AMMETERS

ALTERNATING CURRENT	
MODEL (Dimensions)	DH5EM (48x48)      DP46EM (72x36)
	DH4EM (72x72)      DP35EM (96x48)
	DH3EM (96x96)
PROGRAMMABLE RANGE	
Measuring range X/5 - X/1 A	1...9999 A Decimal point and display value selection using the front keys ▲ ▼



## PROGRAMMABLE/MULTIRANGE DIRECT CURRENT

**Auxiliary Voltage Supply: UNIVERSAL (45-275 V) or STANDARD A.C/D.C  
4 DIGITS**

Display Red light, digit height 14,3 mm, high luminosity.  
Models DH5CM, DP46CM, digit height 10,2 mm.

Max. Reading: 9999

Overrange indication: HHHH

Accuracy: 0,5% of reading  $\pm$  1 Digit

Auxiliary Voltage: UNIVERSAL (45-275 V) A.C./D.C.  
Burden A.C. < 4 VA D.C. < 2 W

Standard Auxiliary Voltage: A.C. 110, 230 or 400 V  $\pm$  20%  
Burden < 3 VA (A.C.);  
D.C 12, 24, 48, 110 or 220 V  $\pm$  20%  
Burden < 2 W (D.C.)

Temperature coefficient: 0,01% /  $^{\circ}$ C



### PROGRAMMABLE AMMETERS

DIRECT CURRENT	
MODEL (Dimensions)	DH5CM (48x48)      DP46CM (72x36)
	DH4CM (72x72)      DP35CM (96x48)
	DH3CM (96x96)
PROGRAMMABLE RANGE	
Measuring range X/60mV	1...9999 A Decimal point and display value selection using the front keys ▲ ▼

### DIRECT INPUT VOLTMETERS

DIRECT CURRENT	
MODEL (Dimensions)	DH5CM (48x48)      DP46CM (72x36)
	DH4CM (72x72)      DP35CM (96x48)
	DH3CM (96x96)
DISPLAY	
Measuring range	500 V

## DOUBLE AND TRIPLE DISPLAY INSTRUMENTS ALTERNATING CURRENT 4 DIGITS

Display: Red light, digit height 14,3 mm, high luminosity.  
 Max. Reading: 9999  
 Overrange indication: HHHH  
 Accuracy: 0,5% of reading  $\pm$  1 Digit  
                   0,05% of reading  $\pm$  1 Digit (Freq.)  
 Auxiliary Voltage: UNIVERSAL (45-275 V) A.C./D.C.  
                           Burden C.A. < 4 VA; D.C. < 2 W  
                           A.C. 110, 230 or 400 V  $\pm$  20%  
                           Burden < 3 VA (per display)  
                           D.C. 12, 24, 48 110 or 220 V  $\pm$  20%  
                           Burden < 2 W (per display)  
 Temperature coefficient: 0,01% /  $^{\circ}$ C  
 Programmable by keys: See below table(\*\*).



Range	Dimensions	Models	Display 1	Display 2	Display 3
V - A	72 x72	DH4EM2	AMMETER x/5 A (*)	VOLTMETER 0-500 V	-----
$V_{12}-V_{13}-V_{23}$	96 x 96	DH3EM3	VOLTMETER 0-500 V (phase-phase)	VOLTMETER 0-500 V (phase-phase)	VOLTMETER 0-500 V (phase-phase)
$V_1-V_2-V_3$	96 x 96	DH3EM3	VOLTMETER 0-300 V(phase-neutral)	VOLTMETER 0-300 V(phase-neutral)	VOLTMETER 0-300 V(phase-neutral)
$A_1-A_2-A_3$	96 x 96	DH3EM3	AMMETER x/5A (*)	AMMETER x/5 A (*)	AMMETER x/5 A (*)
V-A-Hz	96 x 96	DH3EM3	VOLTMETER 0-500 V	AMMETER x/5 A (*)	FREQUENCY 0-999 Hz

(\*) C.T.operated

(**) PROGRAMMABLE RANGE	
Measuring range X/5 A	5-10-15-20-25-30-40-50-60-70-75-80-90-100-120-125-150-160-200-250-300-400-500 ... 600-750-800-900-1000-1200-1250-1400-1500-1600-1750-1800-2000-2200-2250-2400 ... 2500-2750-3000-3500-4000-4500-5000-5500-6000-6500-7000-7500-8000-9000-P000 A

## FREQUENCY METERS 4 DIGITS

Display: Red light, digit height 14,3 mm, high luminosity.  
 Max. Reading: 9999  
 Accuracy: 0,05% of reading  $\pm$  1 Digit.  
 Operating Voltage: 10-500 V  
 Auxiliary Voltage: C.A. 110, 230, 400 V  $\pm$  20%  
                           Burden < 3 VA  
 Temperature coefficient: 0,005% /  $^{\circ}$ C



ALTERNATING CURRENT		
MODEL (Dimensions)	DH4F (72x72) DH3F (96x96)	DP46F (72x36) DP35F (96x48)
DISPLAY		
Measuring range	0 - 999,9 Hz	0 - 999,9 Hz

## DOUBLE AND TRIPLE DISPLAY INSTRUMENTS ALTERNATING CURRENT/DIRECT CURRENT 3½ DIGITS

### GENERAL

Display	Red light, digit height 14,3 mm, high luminosity. Model DH5E, digit height 10,2 mm.
Max. Reading:	1999
Overrange indication:	1---
Accuracy:	0,5% of reading ± 1 Digit A.C. 0,2% of reading ± 1 Digit D.C.
Auxiliary Voltage	A.C. 110, 230 or 400 V ± 20% D.C. 12, 24, 48, 110 or 220 V ± 20%
Temperature coefficient:	Burden < 3 VA (per display) Burden < 2 W (per display) 0,01% / °C



### RANGES (A)

	DIRECT CURRENT	ALTERNATING CURRENT
Measuring range	199,9 µA 1,999 - 19,99 - 199,9 mA 1,999 A .. /60 mV or /150 mV	199,9 or 1999 mA X/1 or X/5

### RANGES (V)

	DIRECT CURRENT	ALTERNATING CURRENT
Measuring range	199,99 mV 1,999 - 19,99 - 199 mV or 600 V	1,999 - 19,99, 199,9 or 600 V

### RANGES (Hz)

	MEASURING RANGE
Frequency	4 Digits
Maximum reading	9999
Accuracy	0,05% of the reading ±1 Digit
	40.00-999,9 Hz

### DOUBLE AND TRIPLE INSTRUMENTS

ALTERNATING CURRENT				
MODEL	DH5E2	DH4E2	DH3E2	DH3E3
(Dimensions)	(48x48)	(72x72)	(96x96)	(96x96)
	(2 Display) <sup>(1)</sup>	(2 Display) <sup>(1)</sup>	(2 Display)	(3 Display)
Measuring range	A, V			A, V, Hz

DIRECT CURRENT				
MODEL	DH5C2	DH4C2	DH3C2	DH3C3
(Dimensions)	(48x48)	(72x72)	(96x96)	(96x96)
	(2 Display) <sup>(1)</sup>	(2 Display) <sup>(1)</sup>	(2 Display)	(3 Display)
Measuring range	A, V or transducer output (mA)			

(1) Auxiliary voltage ; 12, 24 or 48 C.C.

## MULTIRANGE ALTERNATING CURRENT/ DIRECT CURRENT 3 DIGITS

### VOLTMETERS-AMMETERS AND FREQUENCY METERS MULTIRANGE

Display: Red Led, high luminosity  
 DB4\_: Digit height 14,2 mm  
 DB5R\_: Digit height 9 mm

Max. Reading: 999

Overrange indication: EEE

Accuracy: 1% of reading  $\pm$  1 Digit

Auxiliary Voltage: A.C. 115 or 230  $\pm$  20%

Burden < 3 VA

Temperature coefficient: 0,01% /  $^{\circ}$ C



ALTERNATING CURRENT	
<b>MODEL</b>	<b>DB5RE (DIN RAIL)</b>
VOLTMETERS	100 and 600 V
AMMETERS	5-10-15-20-25-30-40-50-60-75... A 100-125-150-200-250-300-400-500-600-750-800-1000 ... A 1200-1250-1500-1600-2000-2500-3000-4000-5000-6000 or 8000 A
.../5	

DIRECT CURRENT	
<b>MODEL</b>	<b>DB5RC (CARRIL DIN)</b>
VOLTMETERS	100 and 600 V
AMMETERS	5-10-15-20-25-30-40-50-60-75... A 100-125-150-200-250-300-400-500-600-750-800 ... A 1000-1200-1250-1500-1600-2000-2500-3000-4000-5000-6000 or 8000 A
.../60mV	



ALTERNATING CURRENT	
<b>MODEL</b>	<b>DB5RF (DIN RAIL)</b>
FREQUENCY METER	30 - 500 Hz
Operating voltage	100 and 600 V $\pm$ 20%

## ALTERNATING CURRENT / DIRECT CURRENT (RMS) 4 1/2 DIGITS

Display: Red light, digit height 14,3 mm, high luminosity.  
 Max. Reading: 19999  
 Overrange indication: 0000 (flashing)  
 Accuracy: 0,5% of reading  $\pm$  1 Digit A.C.  
 0,2% of reading  $\pm$  1 Digit D.C.  
 Auxiliary Voltage A.C.: 110, 230 or 400 V  $\pm$  20%  
 Burden < 3 VA  
 Temperature coefficient: 0,007% / °C



### AMMETERS

MODEL (Dimensions)	DIRECT CURRENT		ALTERNATING CURRENT	
	DQ4C (72x72)	DQ46C (72x36)	DQ4E (72x72)	DQ46E (72x36)
	DQ3C (96x96)	DQ35C (96x48)	DQ3E (96x96)	DQ35E (96x48)
Measuring range	199,99 $\mu$ A 1,9999 - 19,999 - 199,99 or 4-20 mA 1,9999 A .. /60 mV or /150 mV		199,99 or 1999,9 mA X/1 or X/5	

### VOLTMETERS

MODEL (Dimensions)	DIRECT CURRENT		ALTERNATING CURRENT	
	DQ4C (72x72)	DQ46C (72x36)	DQ4E (72x72)	DQ46E (72x36)
	DQ3C (96x96)	DQ35C (96x48)	DQ3E (96x96)	DQ35E (96x48)
Measuring range	19,999 - 199,99 or 1999,9 mV 1,9999 - 19,999 - 199,99 or 600 V		19,999 - 199,99 or 1999,9 mV 1,9999 - 19,999 - 199,99 or 600 V .. /100 or /110 V	

## ALTERNATING CURRENT / DIRECT CURRENT 3 1/2 DIGITS

Display: Red light, digit height 10,2 mm, high luminosity.  
 Max. Reading: 1999  
 Overrange indication: 1---  
 Accuracy: 0,2% of reading  $\pm$  1 Digit D.C.  
 0,5% of reading  $\pm$  1 Digit A.C.  
 Auxiliary Voltage: A.C.: 110, 230 or 400 V  $\pm$  20%  
 D.C.: 12, 24, 48, 110 or 220 V  $\pm$  20% (\*)  
 Burden < 2 W  
 Temperature coefficient: 0,007% / °C



### AMMETERS

MODEL (Dimensions)	DIRECT CURRENT			ALTERNATING CURRENT		
	DP57C(48x24)*	DH5C (48x48)	DP46C (72x36)	DP57E(48x24)*	DH5E (48x48)	DP46E (72x36)
	DP47C(72x24)*	DH4C (72x72)	DP35C (96x48)	DP47E(72x24)*	DH4E (72x72)	DP35E (96x48)
	DP37C(96x24)*	DH3C (96x96)		DP37E(96x24)*	DH3E (96x96)	
Measuring range	199,9 $\mu$ A 1,999 - 19,99 - 199,9 mA 1,999 A .. /60 mV or /150 mV			199,9 or 1999 mA X/1 or X/5		

### VOLTMETERS

	DIRECT CURRENT	ALTERNATING CURRENT
Measuring range	199,9 mV 1,999 - 19,99 - 199,9 or 600 V	1,999 - 19,99 - 199,9 or 600 V X/100 or X/110

(\*) Auxiliary voltage 12-24 or 48 V D.C.

## TRANSDUCER OUTPUT DIRECT CURRENT 3½ and 4½ DIGITS

TRANSDUCER OUTPUT	
Voltage (V)	0-1 ; 0-5 or 0-10 V 1-0-1 ; 5-0-5 or 10-0-10 V 1-5 or 2-10 V
Current (mA)	0-1 ; 0-5 ; 0-10 ; 0-20 mA 4-20 mA

### 3½ DIGITS

Display	Red light, digit height 14,3 mm, high luminosity. Models DH5_ y DP57_, Digit height 10,2 mm.
Max. Reading:	1999
Overrange indication:	1---
Accuracy:	0,2% of reading ± 1 Digit
Auxiliary Voltage: A.C	110, 230 or 400 V ± 20% Burden < 3 VA
D.C	12, 24, 48, 110 or 220 V ± 20% Burden < 2 W
Temperature coefficient:	0,01% / °C



### 3½ DIGITS

DIRECT CURRENT			
MODEL (Dimensions)	DH5C (48x48) <sup>(1)</sup>	DP46C (72x36) <sup>(1)</sup>	DP57C (48x24) <sup>(1)</sup>
	DH4C (72x72) <sup>(1)</sup>	DP35C (96x48)	DP47C (72x24) <sup>(1)</sup>
	DH3C (96x96)		DP37C (96x24) <sup>(1)</sup>
UNITS	mA - A - kA - mV - V - kV - rpm - % - m - Kg - bar - mm - kN Hz - W - kW - MW - VA - var - kvar - Mvar - kVA - °C - °F		

<sup>(1)</sup> Auxiliary Voltage: 12, 24 or 48 D.C

### 4½ DIGITS

Display	Red light, digit height 14,3 mm, high luminosity.
Max. Reading:	19999
Overrange indication:	0000 (flashing)
Accuracy:	0,2% of reading ± 1 Digit
Auxiliary Voltage: C.A.	110, 230 or 400 V ± 20% Burden < 3 VA
Temperature coefficient:	0,007% / °C



### 4½ DIGITS

DIRECT CURRENT	
MODEL (Dimensions)	DP46C (72x36)
	DP35C (96x48)
UNITS	mA - A - kA - mV - V - kV - rpm - % - m - Kg - bar - mm - kN Hz - W - kW - mW - VA - var - kvar - mvar - kVA - °C - °F

## PROGRAMMABLE WATTMETERS AND VARMETERS 3½ or 4 DIGITS

- Keypad available to set the current and voltage transformer ratio.
- Optional programmable alarm.

Display	Red light, digit height 14,3 mm, high luminosity.
Max. Reading:	From -1999 to 9999
Overrange indication:	OFL
Voltage input:	110, 230 or 400 V A.C.
Burden:	< 1 mA per phase (measurement) < 3 VA between phases (Balanced three-phase) or between phase and neutral (Single.-phase)
Current input:	1 or 5 A A.C. / Burden < 0,25 VA
Accuracy:	0,5% of end scale value ± 1 Digit
Temperature coefficient:	0,01% / °C
Alarm circuit:	Optional programmable alarm, Max. or Min. value 1 commutated potential-free contact (250 V, 3A, 200 VA)



WATTMETERS			VARMETERS	
<b>MODEL</b> (Dimensions)	<b>DP35W</b> (96x48)	<b>DP35WI</b> (96x48)	<b>DP35Wr</b> (96x48)	<b>DP35Wir</b> (96x48)
Type	Single-phase Alternating current	Balanced three-phase Alternating current	Single-phase Alternating current	Balanced three-phase Alternating current

## PHASE ANGLE METERS 3½ DIGITS

Display	Red light, digit height 14,3 mm, high luminosity.
Max. Reading:	1.000
Overrange indication:	---
Voltage input:	110, 230 or 400 V A.C. (DH3_, DP35_).
Burden:	< 1 mA per phase (measurement) < 3 VA between phases (Balanced Three-phase) or between phase and neutral (Single-phase)
Current input:	1 or 5 A A.C. Burden < 0,25 VA
Accuracy:	0,5% (90 electrical degrees)
Temperature coefficient:	0,01% / °C
Measuring range:	CAP 0-1-0 IND
IND:	without sign on the display
CAP:	negative sign on the display
Other information:	LO.I for current < 10% In HI.I for current > 120% In HI.U for voltage > 120% Vn



PHASE ANGLE METERS				
<b>MODEL</b> (Dimensions)	<b>DH4S</b> (72x72) <b>DP46S</b> (72x36)	<b>DH3S</b> (96x96) <b>DP35S</b> (96x48)	<b>DH4SI</b> (72x72) <b>DP46SI</b> (72x36)	<b>DH3SI</b> (96x96) <b>DP35SI</b> (96x48)
Type	Single-phase Alternating current		Three-phase Alternating current	

## PROGRAMMABLE DIGITAL INSTRUMENTS DIRECT CURRENT 3½ DIGITS and 4 DIGITS

Measuring instruments complementing physical or electrical parameters converters.

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

### 3½ DIGITS

- Keypad available to set the current and voltage transformer ratio (offset, end of scale and decimal point)
- Optional programmable alarm.

Display	Red light, digit height 14,3 mm, high luminosity.
Max. Reading:	±1999
Accuracy:	0,1% of reading ± 1 Digit.
Overrange indication:	OFL
Temperature coefficient:	0,01% / °C
Auxiliary voltage: A.C.	110, 230 or 400 V ± 20%
	Burden < 3 VA
D.C.	12, 24, 48, 110 or 220 V ± 20%
	Burden < 2 W
Alarm circuit:	1 commutated potential-free contact (250 V, 3 A, 200 VA).Max. or Min.Value.



	AMMETERS	VOLTMETERS
MODEL (Dimensions)	DP35CP (96x48)	DP35CP (96x48)
Measuring range	0 -1; 0 -5; 0 -10: 0 -20 or 4-20 mA	0 -1; 0 -5; 0 -10: 1-0-1; 5-0-5;10-0-10 V 1-5 or 2-10 V

### 4 DIGITS

- Instantaneous, average and maximum value of the parameter.
- Programmable scale range through the keypad (offset, end of scale and decimal point).
- 2 Maximum and Minimum programmable alarms available.

Display	Red light, digit height 14,3 mm, high luminosity.
Max. Reading:	9999; -999 (Negative divided)
Accuracy:	0,1% of reading ± 1 Digit.
Overrange indication:	OFL
Temperature coefficient:	0,01% / °C
Auxiliary voltage: A.C.	110, 230 or 400 V ± 20%
	Burden < 3 VA
D.C.	12, 24, 48, 110 or 220 V ± 20%
	Burden < 2 W
Alarm circuit:	1 commutated potential-free contact (250 V, 3 A, 200 VA).Max. or Min.Value.



	AMMETERS	VOLTMETERS
MODEL (Dimensions)	DP46CPM (72x36)	DP46CPM (72x36)
Measuring range	0 -1; 0 -5; 0 -10: 0 -20 or 4-20 mA	0 -1; 0 -5; 0 -10: 1-0-1; 5-0-5;10-0-10 V 1-5 or 2-10 V



## PROGRAMMABLE MAXIMUM DEMAND AMMETERS ALTERNATING CURRENT 4 DIGITS

- Maximum and instantaneous value of the current.
- Average value of the current (programmable period of time of 8, 15, 20 and 30 Mins).
- True RMS value.
- Programmable alarm set point.

Display	Red light, digit height 10,2 mm, high luminosity.
Max. Reading:	9999
Accuracy:	0,5% of reading $\pm$ 1 Digit
Overrange indication:	F.ESC
Temperature coefficient:	0,007% / $^{\circ}$ C
Alarm circuit:	1 communicate potential-free contact (250 V, 3A, 200 VA)
Auxiliary Voltage:	A.C. 110, 230 V $\pm$ 20 % Burden < 3 VA
	D.C. 12, 24, 48 or 110 V $\pm$ 20% Burden < 2 W



ALTERNATING CURRENT			
MODEL	DP46M	DP46MIR	DP46MII
(Dimensions)	(72x36mm)	(72x36mm)	(72x36 mm)
Measuring range	x/1 A or x/5 A	x/1 A or x/5 A	x/1 A or x/5 A

ALARM SETTING			
Alarm over the current type	Integrated	Instantaneous	Inverted instantaneous
Contacts	NC	NC	NO
Delay	NO	0...99,9 s	NO
Hysteresis	NO	5%	5%

NC: Normally closed NO: Normally open

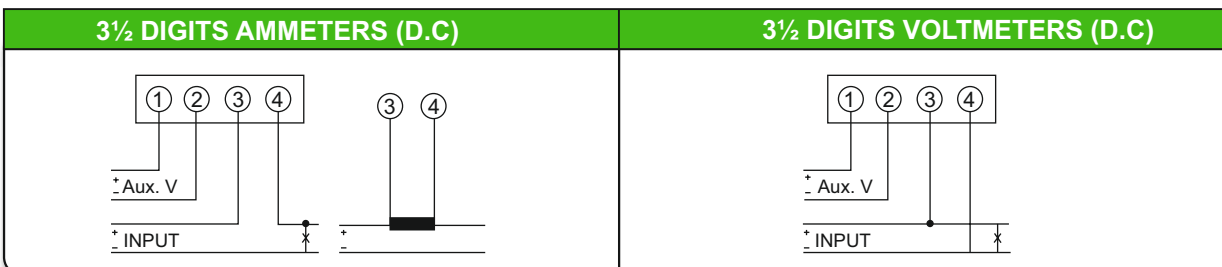
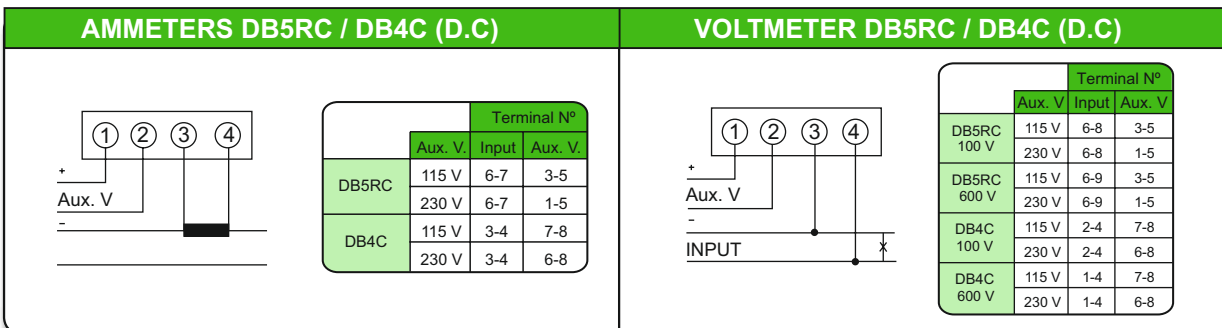
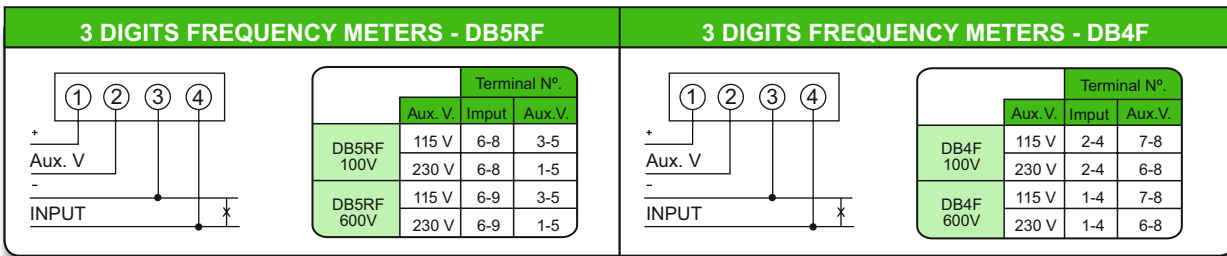
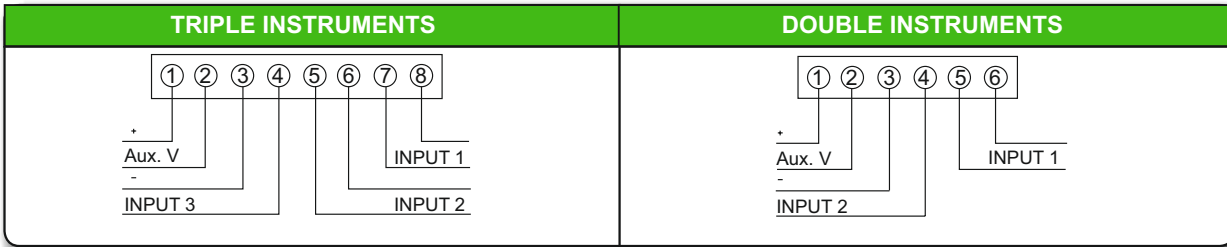
## CONNECTION DIAGRAMS (4 DIGIT INSTRUMENTS)

<b>AMMETER / VOLTMETER</b>	<b>AMMETER / VOLTMETER (DH5-)</b>
<b>TRIPLE AMMETER (A-A-A)</b>	<b>TRIPLE VOLTMETER (Phase / Neutral)</b>
<b>TRIPLE VOLTMETER (Phase/Phase)</b>	<b>DOUBLE INSTRUMENTS (V-A)</b>
<b>TRIPLE VOLTMETER (A-V-Hz)</b>	<b>AMMETER / VOLTMETER (4 1/2 DIGITS)</b>

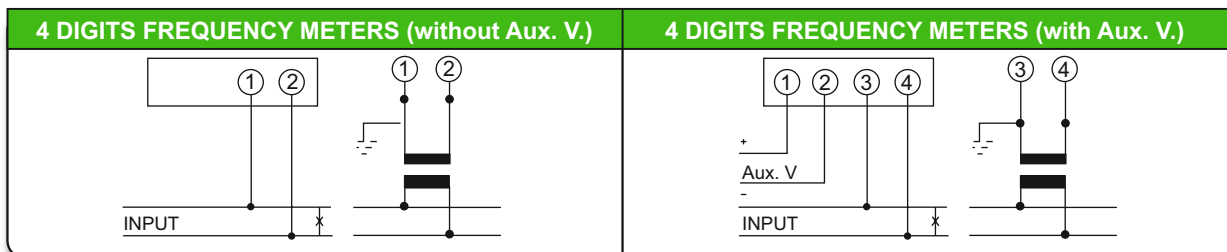
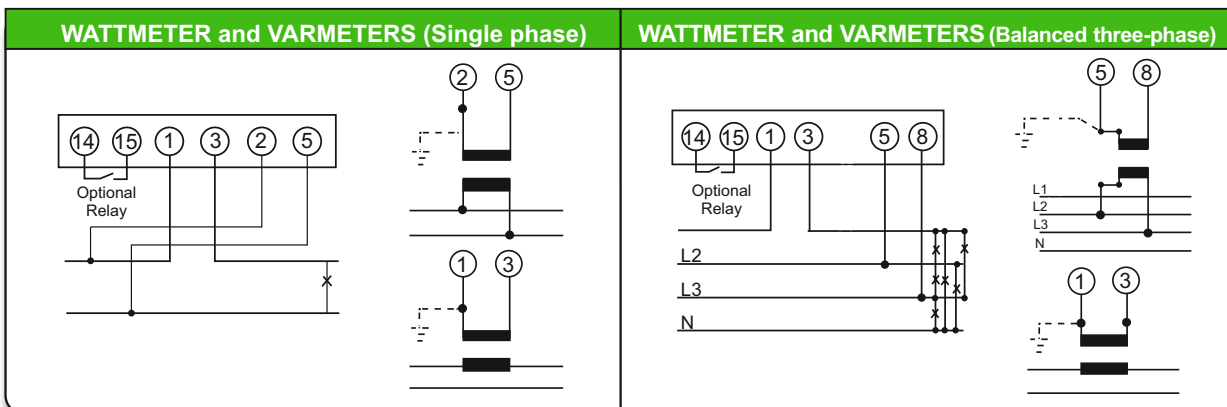
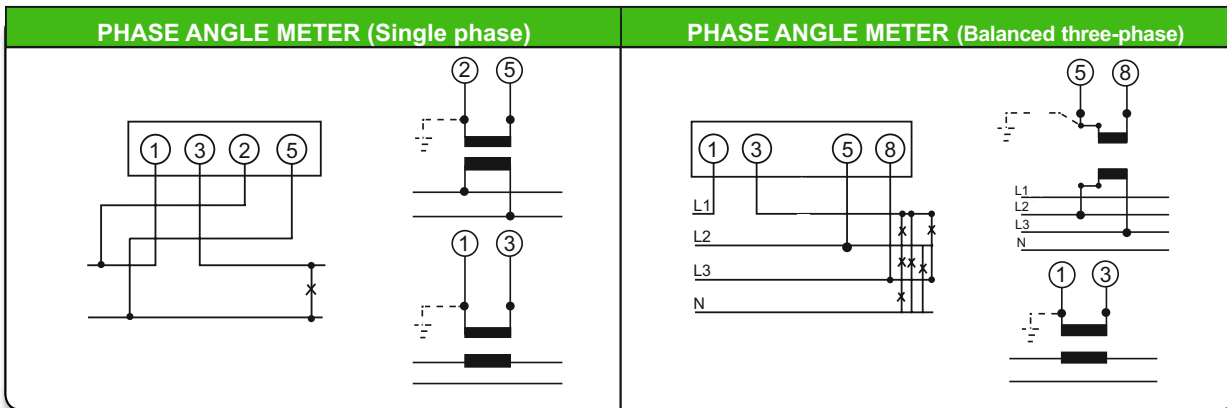
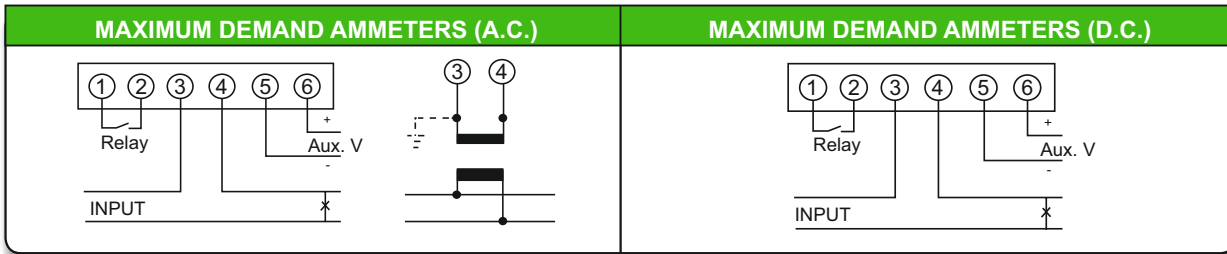
## CONNECTION DIAGRAMS

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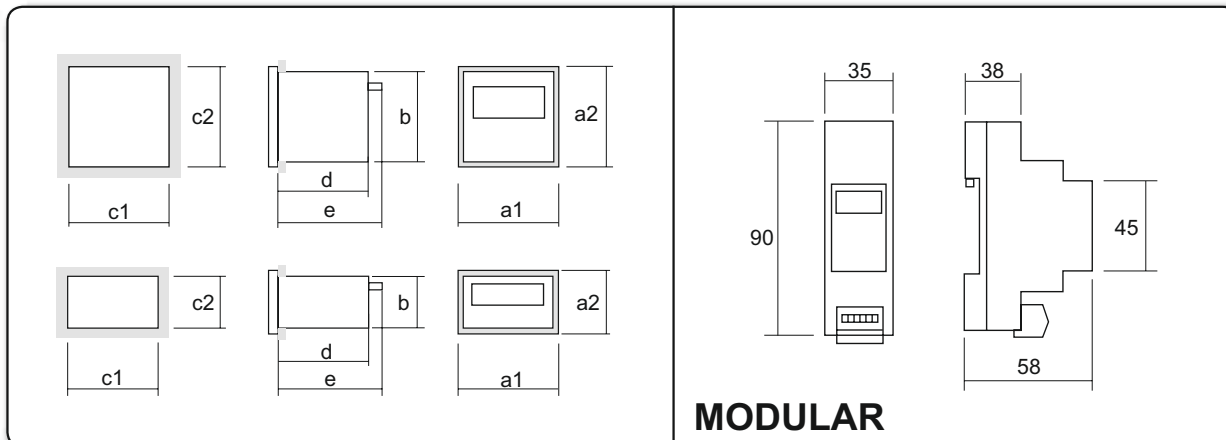
## CONNECTION DIAGRAMS



## CONNECTION DIAGRAMS



## DIMENSIONS



3, 3½ & 4½ DIGITS	DQ4_ (*)	DQ3_ (*)	DP46_	DP35_				
	DH4_2	DH3_2	DP46F (*)	DP35CP (*)				
	DH5_	DH4S_ (*)	DH3_3	DP46M_	DP35S_ (*)	DP57_	DP47_	DP37_
	DB4_ (**)	DH3S_ (*)	DP46S_ (*)	DP35W_				
a1 x a2	48x48	72x72	96x96	72x36	96x48	48x24	72x24	96x24
b	42,6x42,6	66x66	90x90	66x32	90x42,6	42x21	66x21	90x21
c1 x c2	44,5 <sup>+0,7</sup> x44,5 <sup>+0,7</sup>	67,5 <sup>+0,7</sup> x67,5 <sup>+0,7</sup>	91,5 <sup>+0,7</sup> x91,5 <sup>+0,7</sup>	68 <sup>+0,7</sup> x32,5 <sup>+0,7</sup>	91,5 <sup>+0,7</sup> x43,5 <sup>+0,7</sup>	44 <sup>+0,7</sup> x22 <sup>+0,7</sup>	67,5 <sup>+0,7</sup> x22 <sup>+0,7</sup>	92 <sup>+0,7</sup> x22 <sup>+0,7</sup>
d	77	77	77	78,5	78,5	78,5	78,5	78,5
e	87	87	87	88,5	88,5	88,5	88,5	87,5
(*) d	---	112	112	112	112	---	---	---
(*) e	---	122	122	122	122	---	---	---
(**) d	---	51	---	---	---	---	---	---
(**) e	---	61	---	---	---	---	---	---
4 DIGITS	DH5_M	DH4_M	DH3_M	DP46_M	DP35_M			
a1 x a2	48x48	72x72	96x96	72x36	96x48			
b	44,6x44,6	66x66	90x90	66x32	90x43,7			
c1 x c2	46x46	67 <sup>+0,4</sup> x 67 <sup>+0,4</sup>	91 <sup>+0,4</sup> x 91 <sup>+0,4</sup>	67 <sup>+0,4</sup> x 32 <sup>+0,6</sup>	91 <sup>+0,4</sup> x 45 <sup>+0,1</sup>			
d	77	77	77	78,5	78,5			
e	87	87	87	88,5	88,5			

