DP2-VA   VOLT / CURRENT Meter

■ DESCRIPTION

Our **DP2-VA Voltage/Current Indicator has been designed with high accuracy measurement, display and communication of 0~600V or 0~10A for DC/AC/TMRS.**

☑ **The unit features flexible functions such as 3 bank (for multi-range scaling and set points) and 3 external control inputs meet to various testing equipment needs.**

They also feature options of 4 Relay outputs, 3 External Control Inputs, 1 Analogue output and 1 RS485 (Modbus RTU Mode) interface with versatile functions such as control, alarm, re-transmission and communication for a wide range of industrial applications.
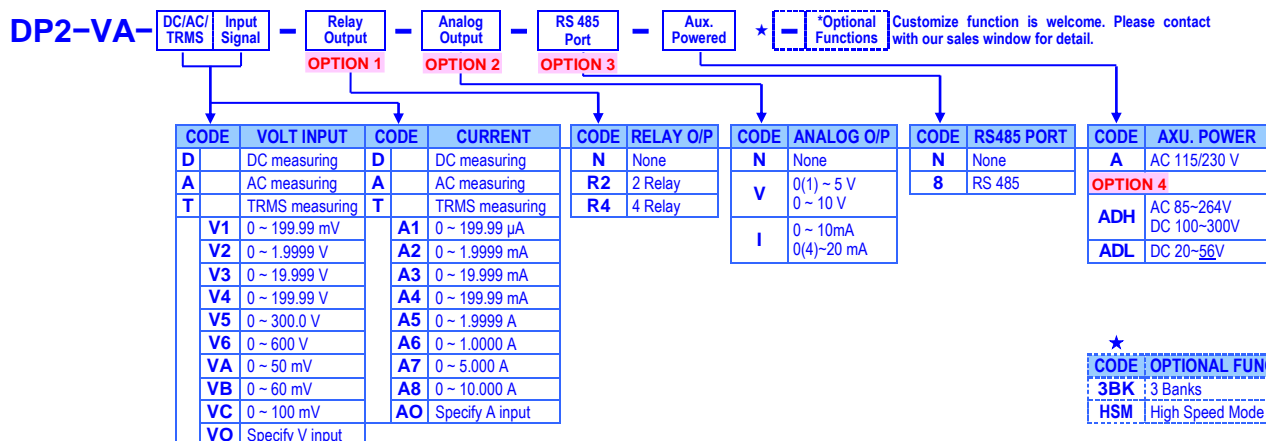
■ FEATURES

- Measuring Voltage 0~600V or Current 0~10A for DC / AC / TRMS
- Optional 4 banks pre-set for all relay functions are relative to 4 difference scaling, and selectable by 3 External Control Inputs(E.C.I.) or front key
- 4 relay can be programmed individual to be a Hi / Lo / Hi Latch / Lo Latch / Go energized with Start Delay / Hysteresis / Energized & De-energized Delay functions, or to be a remote control.
- Analogue output and RS 485 communication port in option
- 3 external control inputs can be programmed individual to be Relative PV (Tare) / PV Hold / Maximum or Minimum Hold / DI (remote monitoring) / Reset for Relay Energized Latch….
- CE Approved & RoHS

■ APPLICATIONS

- Testing Equipments for Volt/Current Measuring, Alarm, Control and Communication with PC/PLC
  - ☑ Flexible 3 DI functions as like as Maximum/Minimum hold, PV hold and Relative PV.
  - ☑ 4 Relay functions as like as Hi / Lo / Go with on and off delay time from 0.0(s)~ 9(m):59.9(s)
  - ☑ 3 Banks preset for individual Hi / Lo scale, decimal point and 4 relay energized level and functions.
- MCC panel, Machinery, Switch gear... for Voltage or Current Measuring, Alarm and Remote I/O with PC/PLC
  - ☑ Fantastic 4 Relay functions as like as Hi / Lo / Hi latch / Lo latch / DO(Remote control by PC/PLC).
  - ☑ Flexible 3 DI functions as like as Reset for Relay energized and Remote monitoring by PC/PLC.

■ ORDERING INFORMATION

DP2−VA− [DC/AC/ TRMS] [Input Signal] − [Relay Output] − [Analog Output] − [RS 485 Port] − [Aux. Powered] ★ − [*Optional Functions]

Customize function is welcome. Please contact with our sales window for detail.

OPTION 1 **OPTION 2** **OPTION 3**

CODE	VOLT INPUT	CODE	CURRENT
D	DC measuring	D	DC measuring
A	AC measuring	A	AC measuring
T	TRMS measuring	T	TRMS measuring
V1	0 ~ 199.99 mV	A1	0 ~ 199.99 μA
V2	0 ~ 1.9999 V	A2	0 ~ 1.9999 mA
V3	0 ~ 19.999 V	A3	0 ~ 19.999 mA
V4	0 ~ 199.99 V	A4	0 ~ 199.99 mA
V5	0 ~ 300.0 V	A5	0 ~ 1.9999 A
V6	0 ~ 600 V	A6	0 ~ 1.0000 A
VA	0 ~ 50 mV	A7	0 ~ 5.000 A
VB	0 ~ 60 mV	A8	0 ~ 10.000 A
VC	0 ~ 100 mV	AO	Specify A input
VO	Specify V input		

CODE	RELAY O/P
N	None
R2	2 Relay
R4	4 Relay

CODE	ANALOG O/P
N	None
V	0(1) ~ 5 V / 0 ~ 10 V
I	0 ~ 10mA / 0(4)~20 mA

CODE	RS485 PORT
N	None
8	RS 485

CODE	AXU. POWER
A	AC 115/230 V

OPTION 4

CODE	AXU. POWER
ADH	AC 85~264V / DC 100~300V
ADL	DC 20~56V

★

CODE	OPTIONAL FUNCTION
3BK	3 Banks
HSM	High Speed Mode

■ TECHNICAL SPECIFICATION

Input

Measuring Range DC / AC / TRMS		Input Impedance	Measuring Range DC / AC / TRMS		Input Impedance
Voltage	0~50/~100 mV	≥5M ohm	Current	0~199.99μA	1K ohm
	0~199.99 mV	≥5M ohm		0~1.9999 mA	100 ohm
	0~1.9999 V	≥1M ohm		0~19.999 mA	10 ohm
	0~19.999 V	≥1M ohm		0~199.99 mA	1 ohm
	0~199.99 V	≥1M ohm		0~1.9999 A	0.05 ohm
	0~300.0 V	≥2M ohm		0~5.000 A	0.02 ohm
	0~600.0 V	≥2M ohm		0~10.000 A	0.01 ohm

Calibration: Digital calibration by front key
A/D converter: **16 bits resolution**
Accuracy: **DC:** ≤± 0.04% of FS ± 1C
AC: ≤± 0.1% of FS ± 1C
Sampling rate: 15 cycles/sec
Response time: ≤ 100 msec.(when the AvG = "1") in standard
Input range: Input High and Low programmable
aⅠhi: Settable range: 0.00~100.00% of input range
aⅠlo: Settable range: 0.00~100.00% of input range

Display & Functions

LED: **Numeric:** 5 digits, 0.8"(20.0mm) red high-bright LED
Relay output indication: 4 square red LED
RS 485 communication: 1 square orange LED
E.C.I. function indication: 3 square green LED
Max/Mini Hold indication: 2 square orange LED

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Display range:	-19999~29999;
Scaling function:	**lOsc:** Low Scale; Settable range: -19999~+29999
	hIsc: High Scale; Settable range: -19999~+29999
Decimal point:	Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000
Banks function:	Extra 3 banks programmable for scaling & decimal point
Over range indication:	**ovfl,** when input is over 20% of input range Hi
Under range indication:	**-ovfl,** when input is under -20% of input range Lo
Max / Mini recording:	Maximum and Minimum value storage during power on.
Display functions:	PV / Max(Mini) Hold / RS 485 Programmable
Front key functions:	Up and down key can be set to be a function as ECI.
Low cut:	Settable range: -19999~29999 counts
Digital fine adjust:	**pVzro:** Settable range: -19999~+29999
	pVspn: Settable range: -19999~+29999

Reading Stable Function

Average:	Settable range: 1~99 times
Moving average:	Settable range: 1(None)/~10 times
Digital filter:	Settable range: 0(None)/1~99 times

Control Functions(option)

Set-points:	Four set-points
Control relay:	Four relays
	Relay 2 & Relay 3: Dual FORM-C, 5A/230Vac, 10A/115V
	Relay 1 & Relay 4: Dual FORM-A, 1A/230Vac, 3A/115V
Banks pre-set:	**4 banks pre-set for all relay functions to relative 4 difference scaling, and selectable by 3 External Control Inputs(E.C.I.) Or front key**
Relay energized mode:	Energized levels compare with set-points:
	Hi / Lo / Go.12 / Go.23 / **Hi.HLd / Lo.HLd**; programmable
	DO function: Energized by RS485 command of master.
Energizing functions:	Start delay / Energized & De-energized delay / Hysteresis / Energized Latch
	Start band(Minimum level for Energizing): 0~9999counts
	Start delay time: 0:00.0~9(Minutes):59.9(Second)
	Energized delay time: 0.00.0~9(Minutes):59.9(Second)
	De-energized delay time: 0.00.0~9(Minutes):59.9(Second)
	Hysteresis: 0~5000 counts

External Control Inputs(ECI)

Input mode:	3 ECI points, Contact or open collect input, Level trigger
Functions:	Relative PV(Tare) / PV Hold / Reset for Max or Mini. Hold / **DI** / Reset for Relay Energized latch / **Banks selection**
Debouncing time:	Settable range 5 ~255 x (8mseconds)

Analogue output(option)

Accuracy:	**≤± 0.1% of F.S.; 16 bits DA converter**
Ripple:	≤± 0.1% of F.S.
Response time:	≤100 msec. (10~90% of input)
Isolation:	AC 2.0 KV between input and output
Output range:	Specify either Voltage or Current output in ordering
	Voltage: 0~5V / 0~10V / 1~5V programmable
	Current: 0~10mA / 0~20mA / 4~20mA programmable
Output capability:	**Voltage: 0~10V: ≥ 1000Ω;**
	Current: 4(0)~20mA: ≤ 600Ω max
Functions:	**aOhs**(output range high): Settable range: -19999~2999
	aOls(output range Low): Settable range: -19999~2999
	aOlmt(output High Limit): 0.00~110.00% of output High
Digital fine adjust:	**aOzro:** Settable range: -38011~+27524
	aOspn: Settable range: -38011~+27524

RS 485 Communication(option)

Protocol:	Modbus RTU mode
Baud rate:	1200/2400/4800/9600/19200/38400 programmable
Data bits:	8 bits
Parity:	Even, odd or none (with 1 or 2 stop bit) programmable
Address:	1 ~ 255 programmable
Remote display:	**to show the value from RS485 command of master**
Distance:	1200M
Terminate resistor:	150Ω at last unit.

Electrical Safety

Dielectric strength:	AC 2.0 KV for 1 min, Between Power / Input / Output / Case

Insulation resistance:	≥100M ohm at 500Vdc, Between Power / Input / Output
Isolation:	Between Power / Input / Relay / Analogue / RS485 / E.C.I.
EMC:	EN 55011:2002; EN 61326:2003
Safety(LVD):	EN 61010-1:2001
Vibration:	1~800 Hz, 3.175 g²/Hz

Environmental

Operating temp.:	0~60 ˚C
Operating humidity:	20~95 %RH, Non-condensing
Temp. coefficient:	≤100 PPM/˚C
Storage temp.:	-10~70 ˚C
Enclosure:	Front panel: IEC 529 (IP52); Housing: IP20

Mechanical

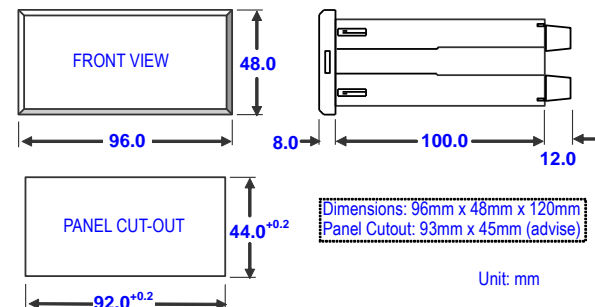|	
Dimensions:	96mm(W) x 48mm(H) x 120mm(D)
Panel cutout:	92mm(W) x 44mm(H)
Case material:	ABS fire-resistance (UL 94V-0)
Mounting:	Panel flush mounting
Terminal block:	Plastic NYLON 66 (UL 94V-0)
	#A1~A3(current input): 20A/300Vac, M3.5, 12~22AWG
	Others: 10A 300Vac, M2.6, 16~22AWG
Weight:	550g / 350g(Aux. Power Code: ADH or ADL)

Power

Power supply:	AC115/230V,50/60Hz;
	Optional: AC 85~264V / DC 100~300V or DC 20~56V
Power consumption:	5.0VA maximum
Back up memory:	By EEPROM

■ FRONT PANEL

Relay status Indication — Display screen — Operation Key — Max. Hold status — Comm. status — Control Input status — Mini. Hold status — Engineer Unit

■ DIMENSIONS

FRONT VIEW — 48.0 — 96.0 — 8.0 — 100.0 — 12.0

PANEL CUT-OUT — 44.0⁺⁰·² — 92.0⁺⁰·²

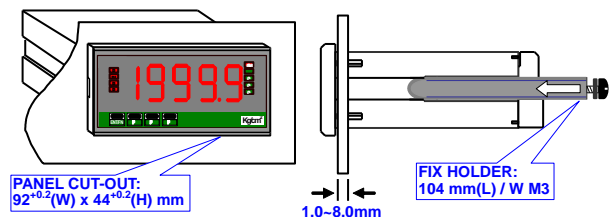Dimensions: 96mm x 48mm x 120mm
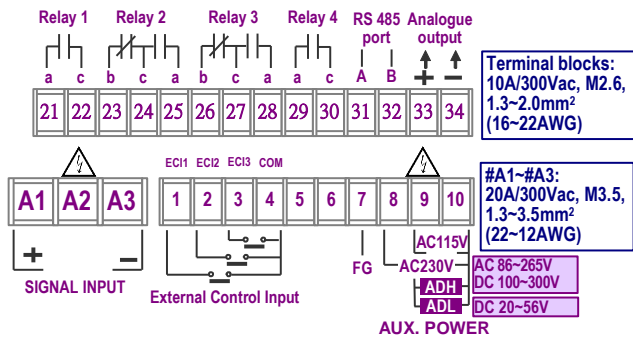Panel Cutout: 93mm x 45mm (advise)

Unit: mm
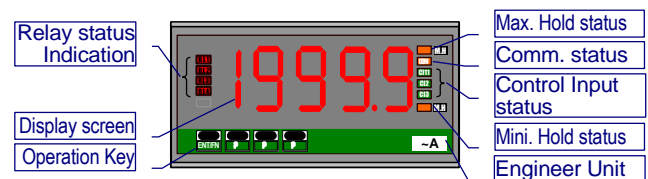
■ INSTALLATION

The meter should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation.
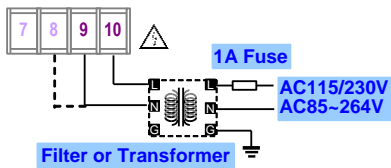

PANEL CUT-OUT: 92⁺⁰·²(W) x 44⁺⁰·²(H) mm

FIX HOLDER: 104 mm(L) / W M3

1.0~8.0mm

■ CONNECTION DIAGRAM

Relay 1 | **Relay 2** | **Relay 3** | **Relay 4** | **RS 485 port** | **Analogue output**

| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |

Terminal blocks:
10A/300Vac, M2.6,
1.3~2.0mm²
(16~22AWG)

| A1 | A2 | A3 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

ECI1 ECI2 ECI3 COM

#A1~#A3:
20A/300Vac, M3.5,
1.3~3.5mm²
(22~12AWG)

SIGNAL INPUT

External Control Input

FG

AC115V
AC230V
ADH
ADL

AC 86~265V
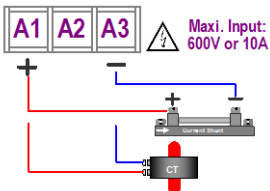DC 100~300V
DC 20~56V

AUX. POWER

Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker.
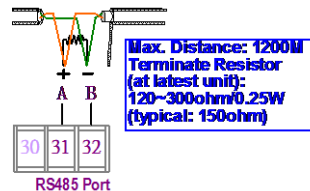
Power Supply

| 7 | 8 | 9 | 10 |

1A Fuse

L L AC115/230V
N N AC85~264V
G

Filter or Transformer

Input connection

| A1 | A2 | A3 |

Maxi. Input:
600V or 10A

Current Shunt

CT

RS485 Communication Port

A B

Max. Distance: 1200M
Terminate Resistor
(at latest unit):
120~300ohm/0.25W
(typical: 150ohm)

| 30 | 31 | 32 |

RS485 Port

Remark:
PT can not short in secondary.
CT can not open in secondary.

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