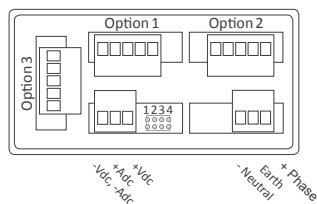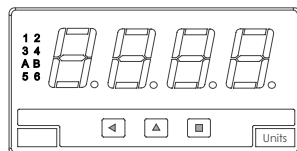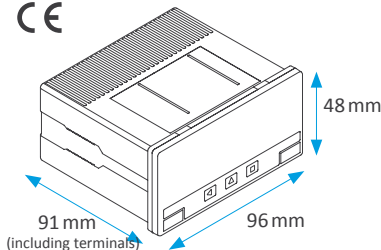# K40-D   DC Voltmeter and Ammeter

Digital DC voltmeter and DC ammeter, with 20 mm digit height, in 96 x 48 mm (1/8 DIN) standard size, for panel mount. Accepts multiple input scales up to 600 Vdc and up to 5 Adc. Universal high and low AC and DC power options. Optional retransmission and control modules with relays, analog outputs and serial outputs.
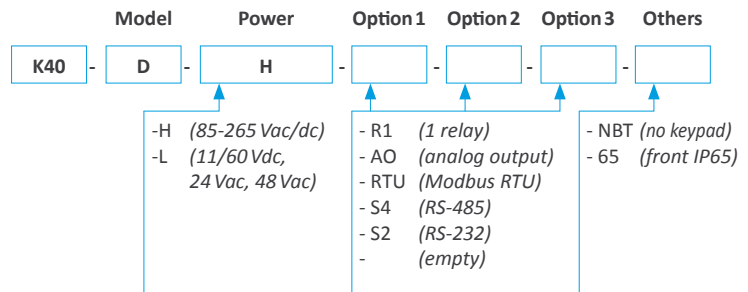
Technical specifications

Digits	4
Reading	9999 / -1999
Decimal point	configurable
Led color	red
Digit height	20 mm
Signal ranges	±600 Vdc, ±100 Vdc, ±10 Vdc, ±1 Vdc, ±0.1 Vdc ±5 Adc, ±1 Adc
Reading	scalable
Accuracy	0.10 % FS in Vdc
	0.15 % FS in Adc
Offset drift	50 ppm/ºC
Span drift*	100 ppm/ºC *span drift value includes offset drift
Readings	15 readings / second
Response time to the step	<210 mSec. (0 % to 99 % signal) *<75 mSec. for changes below 10 %
Input impedance	depends on range (see User's Manual)
Power 'H'	85 to 265 Vac/dc (isolated 2500 Veff)
Power 'L'	11 to 60 Vdc y 24/48 Vac (isolated 1500 Veff)
Retransmission and control options	relays, analog output, Modbus RTU, ...
Consumption	<1.5 W (meter only) <4.0 W (meter with options)
Protection	IP54 standard (optional IP65)
Connections	plug-in screw terminal
Weight	<150 grams
Mounting	panel
Front size	96 x 48 mm
Panel cut-out	92 x 44 mm
Deep	91 mm (including terminals)
Operating temperature	0 to 50 ºC

Dimensions and connections

91 mm (including terminals)   96 mm   48 mm

Units

Option 1   Option 2   Option 3

+Vdc. -Vdc. +Adc. -Adc. +Phase -Neutral Earth

Detail of the plug-in screw terminal. The instrument is provided will all male and female terminals needed.

Order reference

	Model	Power	Option 1	Option 2	Option 3	Others
K40	D	H				

-H *(85-265 Vac/dc)*
-L *(11/60 Vdc, 24 Vac, 48 Vac)*

- R1   *(1 relay)*
- AO   *(analog output)*
- RTU   *(Modbus RTU)*
- S4   *(RS-485)*
- S2   *(RS-232)*
- -   *(empty)*
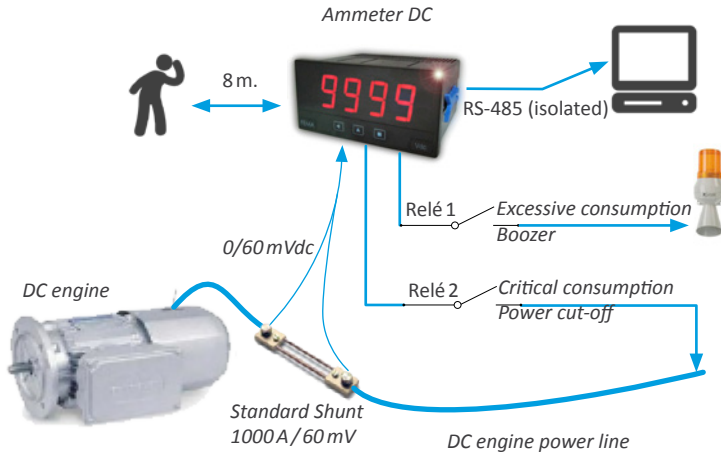
- NBT   *(no keypad)*
- 65   *(front IP65)*

* Relays R1 with contacts (NC / NO / Common), max. 250 Vac 8 A
* Special options with 4 and 6 relays.
* Analog outputs and serial outputs, isolated.

Functions included

'**Fast access**' menu . . . . a single press on the front keypad gives access to alarm setpoint modification, special functions, memory of maximum and minimum reading, ...

'**Field correction**' function . . . for fast and easy offset corrections when installing on the field.

'**On power-up**' function . . . . . protects remote systems by delaying the output and control signals at cold start-up.

Alarms . . . . with one or two setpoints, independent activation and deactivation delays, hysteresis, optional manual deactivation of the relay.

Inverted relay . . . . for security applications, relay can be configured with inverted function.

'**Peak & hold**' function . . . . . . for test-break applications.

Display filters. . . . . recursive filters for noisy signals, optional reading in predefined steps, configurable fixed digits, ...

Brightness . . . . 5 levels of brightness intensity.

Password . . . . blocks access to configuration menu.

45 YEARS 1969-2014

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Altimira 14, P.I. Santiga . E08210 Barberà del Vallès . Barcelona . Spain . T. +34 93.729.6004 . F. +34 93.729.6003
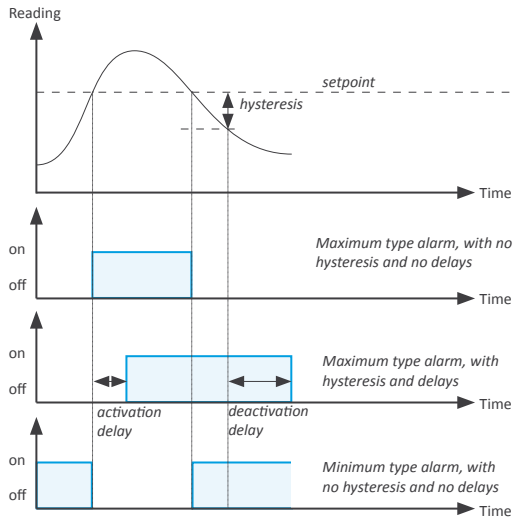
Application example

Measure of current consumption on an DC engine measured through a standard 1000 Adc / 60 mVdc shunt. A first relay output signal the excessive consumption for operator intervention. A second relay output controls the power cut-off in case of critical consumption. Retransmission of the reading value to a remote SCADA of PLC unit through an isolated RS-485 bus.
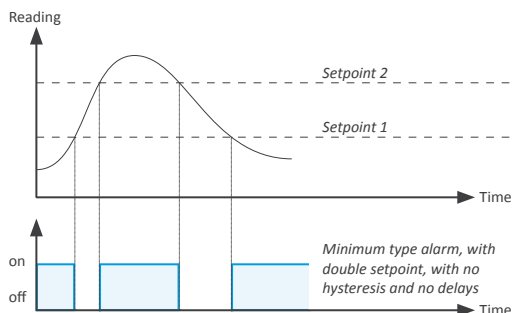
Ammeter DC

8 m.

9999

RS-485 (isolated)

Relé 1 — Excessive consumption Boozer

0/60 mVdc

Relé 2 — Critical consumption Power cut-off

DC engine

Standard Shunt 1000 A / 60 mV

DC engine power line

Alarms example

Alarms with one setpoint, configurable deactivation hysteresis, independent activation and deactivation delays.

Reading

setpoint

hysteresis

Time

on / off — Maximum type alarm, with no hysteresis and no delays

Time

on / off — Maximum type alarm, with hysteresis and delays

activation delay / deactivation delay

Time

on / off — Minimum type alarm, with no hysteresis and no delays

Time

Double setpoint alarms

Alarms with double setpoint, configurable as maximum or minimum, allow to create activation or deactivation windows..

Reading

Setpoint 2

Setpoint 1

Time

on / off — Minimum type alarm, with double setpoint, with no hysteresis and no delays

Time

Other options and accessories

Options for K Series of instruments and mounting accessories for 96 x 48 mm housings of K Series.

99990

NBT - Without front keypad

9999

WME - Wall mount housing

995959

DRA - DIN rail mount adapter

999999

65 - IP65 front sealing

999999

THM - Benchtop housing

KIP - Protector IP65

995959

KA96 - 96 x 96 mm adapter

Web documentation

K40-D user's manual   www.fema.es / docs / 3642_K40-D_manual_i.pdf
K40-D datasheet   www.fema.es / docs / 3638_K40-D_datasheet_i.pdf

Reading distances

Reading distances and series of product for panel meters with digit height starting at 10 mm and up to 100 mm.

Digit height (mm)	10	14	20	60	100
Reading distance	4 m	5 m	8 m	20 m	40 m
Series	L35	Series M	Series K	BDF-24	BDF-44

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