

ADP15 DC Voltage and Current Instrument.

Features

Microprocessor based design.
Full calibration & programming via keypad & comms import.
Switch selectable offset +/- 70% FS.
Excitation: regulated 10V @ 110mA.
3 year manufacturer's warranty.
Full CE approval.

4.5 digit high resolution.
DC Voltages 20mV to 200 V.

An idea 1 product to stock.

Output Available

Analogue.
Relays.
Communications.
Printer Drive.
Pulse/Frequency.
Control.



Options

Panel Mounting or Din Rail Mounting

Supplies for 110/240 Vac or 24/48 Vdc

Communications Output for Printer, PLC or PC

Software Options:- Power Factor

Valve Control

Analogue Totaliser/Integrator

Auto Zero and Auto Calibration

Accessories

IF25 Interface Module Connects up to 25 ADP15's to one RS232 port

Printers DP data only and TDP for real time/data

REM 4/8- for multi-set point nits up to 16 set points

specifications & order codes input details

Input Code	RANGE		Resolution	+ % of Input	+
	Minimum	Maximum			
DCV1	-19.999mV	+19.999mV	1 μ V	0.06	6 μ V
DCV2	-19.99mV	+19.99mV	10 μ V	0.04	30 μ V
DCV3	-1.999V	+1.999V	100 μ V	0.04	300 μ V
DCV4	-19.999V	+19.999V	1mV	0.04	3mV
DCV5	-19.99V	+19.99V	10mV	0.04	30mV
DCA1	-1.999mA	+1.999mA	100nA	0.1	500nA
DCA2	+4.000mA	+19.999mA	400nA	0.1	2 μ A
DCA3	-19.999mA	+19.999mA	1 μ A	0.1	5 μ A
DCA4	-1999.99mA	+199.99	10 μ A	0.1	50 μ A

Scaling: Full keypad scaling by setting minimum display points using IPL and IPH. Factory preset calibration by 15-turn trimers for offset and gain.

Software Option:
Analogue Integrator-Up/Down Totaliser, Input Code Suffix/ATL: This module will totalise with time any linear analogue input. Input is scaled in the normal manner to give engineering units. This is then totalised with time and displayed.
Display of 'live' input can also be selected.
Scaling Normalised to 1 hour e.g. for steady input value applied for 1 hour would result in that value being added to the display. Normalisation can be scaled from 0.5 hours to 20.000 hours and offset by setting of keyboard values.
Totalised value is retained during loss of power
Accuracy: Analogue input accuracy $\pm 0.005\%$
Reset: By external volt free contact

output details

D/C Analogue Outputs

Code	RANGE		Code	RANGE	
	Min	Max		Min	Max
V1	0	1V	A1	0	1mA
V2	0	5V	A2	0	20mA
V3	1	5V	A3	4	20mA
V4	0	10V	A4	10	50mA
			A5	0	5mA

Max Current out 50mA Max Voltage out 20V

Accuracy: typical $\pm 0.08\%$ of output, $\pm 0.08\%$ FSD
Resolution: as display resolution, max 15 bits
Calibration: by 15-turn presets for gain and offset
Inversion: By keypad code
Isolation: $\pm 130V$ RMS or DC max. to analogue input or any other port
Ranging: fully keypad scalable over desired display range
PID: Power level, when selected = 12 bit resolution output

Frequency Output
 Provides a varying frequency output from the displayed input variable.

Code	RANGE	
	Min	Max
F1	18.204 Hz	2352.9 Hz

Scaling: By keypad OPL Display point for minimum frequency
 OPH Display point for maximum frequency
 With coarse adjustment from prescaler for divide by 1,2,4,8,16,32,64 or 128 selectable by internal DIP switches.
 Transistor switch output, 2V min to 20mV max. **Isolation:** $\pm 130V$ RMS or DC max. to analogue input or any other port

Communication Port CP
Operation
 All ADP15 display data can be accessed via the communications port along with relay, PID power and EEPROM status.
 All ADP15 user configurable data can be changed including EEPROM enable/disable and relay reset. (ADP15 address code cannot be changed.)

Connections: 4 wire for 2x2 20mA isolated transmit and receive loops

Max cable length: 1 Km (depending on baud rate and can be used)

Baud rates: 300, 600, 1200, 2400, 4800, 9600 (19200 SI only)

Electrical Isolation: $\pm 130V$ RMS or DC max. to analogue input or any other port

Format: S1 High Speed, high data integrity using check sum and ACK/NAK handshaking
 S2 ASCII format for easy use

RS232 to 20mA, IF25 interface
 Connection to RS232 via separate IF25 interface which will support up to 25 ADP15's. Up to 10 IF25's can be directly wired together to support 250 ADP15's from one RS232 port.

Printer output RS232
 The printer option utilises the communications board RS232 output.
 With the output drive for a printer offering a Time/Date stamp and log number together with the label of units of measure, or
 With the output drive for a log number only, together with label of units of measure. A wide range of printer may be connected.

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Alarm/Control Outputs

Code	Type	Function	Code	Type	Function
R1	SPCO	1 relay on SP1	R5	DPCO	1 relay on SP2
R2	DPCO	1 relay on SP1	TR1	SPNO	1 Triac on SP1
R3	SPCO	2 relays on SP1&2	TR2	SPNO	2 Triacs on SP1&2
R4	SPCO	1 relay on SP2			

Relays: 240V at 5A a.c. resistive. Isolation 354VP. Triacs: 240V at 2V a.c. resistive. Zero crossing. Isolation 354VP. Keypad programmable options: see configurable parameters for Hysteresis, Latching, Output Inversion, Delay Times, PID values and Time Proportioning.

Power Supplies

Code	Type	
240	220V-240V	A.C. 50-60Hz 10W
110	110V-120V	A.C. 50-60Hz 10W
24/48	18-60V	D.C. 10W isolated

Base ADP15
Input Filter: Programmable to average up to 64 display updates.
Display: Analogue update 0.4s
Rate update: 0.4s or 1x input period whichever is the greater.
 7 segment LED 4.5 digit 10mm.
 3 x 3mm LED's 2 for relay status, 1 for programme and hold indication.

Controls: 4 membrane panel keys with tactile feedback. 1 scroll key to view/update parameter. 1 digit select key, 1 digit increment key, 1 reset key. Keypad disable by internal links behind front panel. Hold function by digit select key when in input mode.

Data Retention/Protection
Retention: 10 years for set up values, minimum of 10,000 write cycles.
Protection of data and function(s): Watchdog timer giving repeat auto resets. Impending power detection and hold off. Keypad security and time out.

Environmental

Storage temperature	-20 to +70°C
Operating temperature	-10 to 50°C
Relative humidity	95% maximum non stop condensing
Front panel sealing	To IP65

Physical

Case Dimensions:	DIN 72 x 72 x 163mm (excluding mounting terminal)
Case Material:	Grey Noryl, flame retardant
Weight:	750g
Terminals:	2.5mm, saddle field terminals
Accessibility:	All electronics removable through front panel leaving field wiring and case in situ.

In the interests of continued product development, Mantracourt Electronics Limited reserves the right to alter product specifications without prior notice.

