



The Model 4001 four digit (-1999 to 9999) LED Universal Process Indicator can be applied to most process variables with analogue & digital inputs. This high accuracy, high-quality panel meter is designed for accurate measurement & display of pressure, level, flow, frequency, DC voltages or currents & revolutions per minute. Options include linearisation, analogue output and set-points up to a total of four. The display & analogue output is rangeable from the front pushbuttons. Excitation is standard & is link selectable for 2-wire / 3-wire transmitters, encoders & potentiometer input.

Selected options now feature 'Plug & Play' technology, allowing option boards to be ordered separately & field fitted when required.

FEATURES

- 1/8 DIN enclosure (45 x 92 cut-out), UL 94 V-0 flame retardant, 147mm depth
- Front panel IP 65 / NEMA 4 / UL Type 4 rating, bezel 48 x 96 mm
- 1999 to 9999 display counts, 14.2mm bright red LED display
- 24VDC supply for 2 / 3 wire transmitters
- Low cost - high performance design
- Process inputs, frequency & counting functions
- Keypad lockout available at no extra charge
- Meets European EMC directive 89/336/EEC & Low Voltage directive 73/23/EEC
- 3 year guarantee

OPTIONS

<p>3000 Lineariser (square root / sphere / & more)</p> <p>3001-P 2 set points (solid-state relays)</p> <p>3001-M 2 set points (electro-mechanical relays)</p> <p>3002 RS 485 serial interface</p> <p>3003 0 - 20mA / 4 - 20 mA analogue output</p> <p>3004-P 1 set point (solid-state relay)</p> <p>3004-M 1 set point (electro-mechanical relay)</p> <p>3006 Isolated outputs (order with 3002/3/7/13)</p> <p>3007 0 - 10V analogue output</p> <p>3008 12 / 24V galvanic isolated DC supply</p> <p>3009 Parallel BCD output</p> <p>3010 95-265V AC/DC isolated power supply</p> <p>3011 Ohms / tap input</p> <p>3012 Peak / valley hold</p>	<p>3013 RS 232 serial interface</p> <p>3014 Auto zero (with remote zero)</p> <p>3015 Differential inputs (non-prog)</p> <p>3017-P 3 set points (solid-state relays)</p> <p>3017-M 3 set points (electro-mechanical)</p> <p>3018-P 4 set points (solid-state relays)</p> <p>3018-M 4 set points (electro-mechanical)</p> <p>3020 Ultra bright Red LED display</p> <p>3021 Mains frequency measurement</p> <p>3022 Vertical bar graph display</p> <p>3024 Manual set point station</p> <p>3025 Keypad lockout</p> <p>3026 Display hold</p> <p>3027 Summing input</p>
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NOTE : Most of the above options are factory fitted. Customer / field fitted options are available as 'plug-&-play' boards & software activated options. Contact factory for more information.

NOTE : Option 3009 cannot be ordered with any alarm options, or with option 3006, or with option 3022.

NOTE : Option 3012 & 3014 cannot be ordered together.

SPECIFICATIONS

DISPLAY & OPERATION

Specification	4 digit (-1999 to 9999) bright red LED, 14.2mm high
Setup and calibration	Full digital with visual prompting in plain messages
Memory retention	Full non-volatile operation

ANALOGUE INPUT RANGES

0 - 20 mA	Input impedance 100 Ω	Other ranges on request
4 - 20 mA	Input impedance 100 Ω	
0 - 200mV	Input impedance 100 k Ω	These inputs are all standard and are link selectable, with programmable zero, span and decimal point.
0 - 2 V	Input impedance 100 k Ω	
0 - 10 V	Input impedance 500 k Ω	
0 - 20 V	Input impedance 1 M Ω	
Potentiometer	Input impedance 100 k Ω	

ANALOGUE PERFORMANCE

Accuracy & linearity	0.05% of full scale, ± 1 display count
Option 3011/3015/3027 accuracy	0.5% of full scale, ± 1 display count
A/D Type & resolution	16 bit dual slope, 40 000 internal counts
A/D conversion rate	Approximately 7 per second
Temperature coefficient	20 ppm/ $^{\circ}$ C typically
Settling time (process inputs)	0.5 seconds
Settling time (frequency input)	5 msec (no averaging)
Power-up / self test time	1 - 3 seconds
Warm up time	None required

COUNTER / FREQUENCY INPUT

0.2Hz - 40000Hz, 5V nominal, 24V maximum. Up to 0.01 Hz resolution.
Input factor programmable from 00.01 to 99.99.
Frequency damping of 0, 0.5, 1.1 and 4.5 seconds programmable
Frequency display is Hz or RPM programmable
Counter reset via 'Enter' key (press for 3 seconds) or via external reset (instantaneous).
NPN / PNP / NAMUR proximity switch selectable via jumper links.

EXCITATION

(FOR EXTERNAL TRANSMITTERS, PROXIMITY SWITCHES & POTS)

Link selectable for:
24 VDC (17-26V), current limited. For 2-wire transmitters, proximity switches or encoders.
5VDC $\pm 1\%$. Maximum 25mA.
2.5 VDC precision reference, 2mA maximum for potentiometer (2k Ω pot minimum).

Option: 24 VDC (17-26V), increased current capacity 100mA with option 3010.

ANALOGUE OUTPUT OPTION

Analog output isolation	Optional, 1500V input/output isolation (order option 3006)
Analog output accuracy	0.1% of full scale, 12-bits
Analog output temp. coefficient	20 ppm / $^{\circ}$ C typically
Current analog output load	500 Ω maximum (current is source, not sink)
Voltage analog output load	1 k Ω minimum

SET POINT OPTIONS

Adjustable settings:	Hysteresis, on delay, hi/lo, normally open/closed
Electro-mechanical relay:	
Rating	250V AC, 30V DC, 2A, power factor 1
Form type	Form C (change-over contact)
Solid-state relay:	
Rating	400V AC/DC, 0.5A, power factor 1
Form type	Form A (normally open contact)

REGULATORY COMPLIANCE

Regulatory requirements	Complies with EC Directives 89/336/EEC & 73/23/EEC
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SERIAL INTERFACE OPTIONS

Serial interface	RS-232 or RS-485, 2400, 4800, 9600 & 19200 baud
Isolation to input	Optional, 1500V isolation (order option 3006)
Capabilities - Digibus protocol	Full remote control, except for field setup
Capabilities - Ascibus protocol	- continuous output approximately 5 x second - output on demand via print button - output on demand via serial request

ENVIRONMENTAL

Operating temperature range	-10 to +50°C
Service temperature range	-15 to +60°C
Storage temperature range	-40 to +80°C
Humidity	< 85% non-condensing

MECHANICAL SPECIFICATIONS

Dimensions	DIN 1/8, 96 mm wide x 48 mm high x 147 mm deep
Protection	Industrial strength, UL 94 V-0 flame retardant ABS plastic
Front panel rating	IP 65 / NEMA 4 / UL Type 4 with supplied o-ring seal

POWER SUPPLY

STANDARD

115 / 230 VAC \pm 10% (standard), link selectable, 50/60Hz, 5VA typical
12VDC or 24VDC non-isolated on request, 5VA typical

OPTIONAL

12VDC isolated switch mode power supply option (Option 3008-12), 5VA typical
24VDC isolated switch mode power supply option (Option 3008-24), 5VA typical
95V-265V AC/DC switch mode power supply option (Option 3010), 5VA typical

ORDERING EXAMPLE

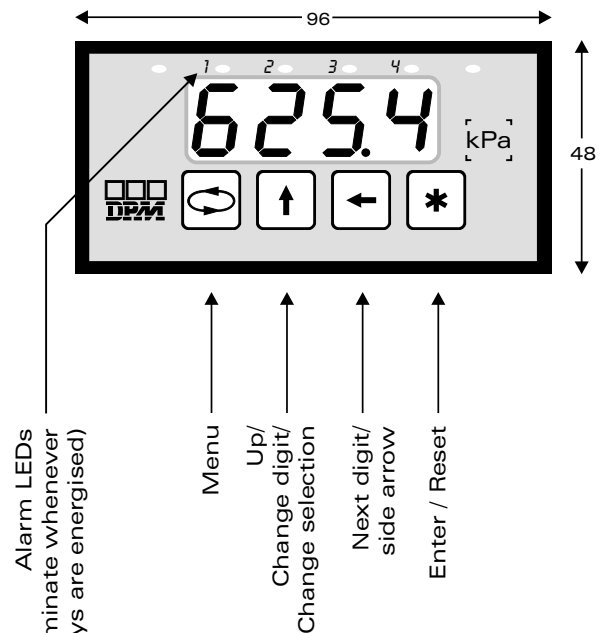
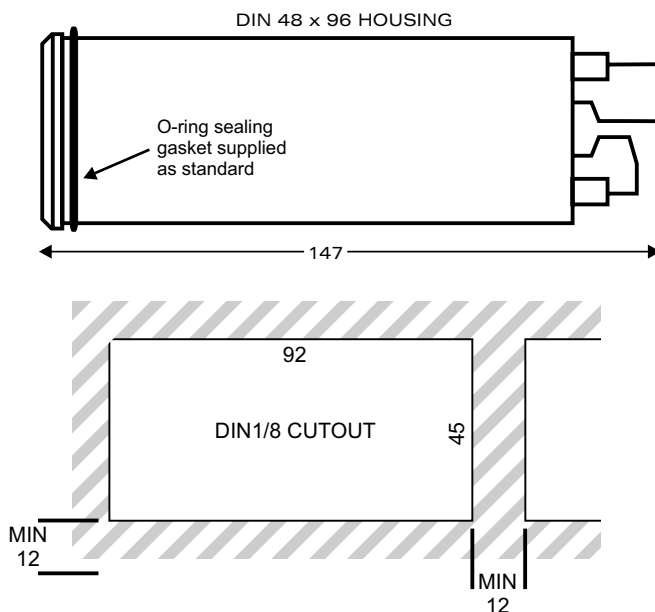
Option modules (see page 1)

MODEL 4001 - 3001P - 3003

Input :	4 - 20 mA
Display :	0 - 350.0 T/Hr
Aux Supply :	230 VAC
Analog output :	4 - 20 mA = 0 - 250.0 T/Hr
Setpoints :	2 setpoints with solid state relays

FRONT PANEL

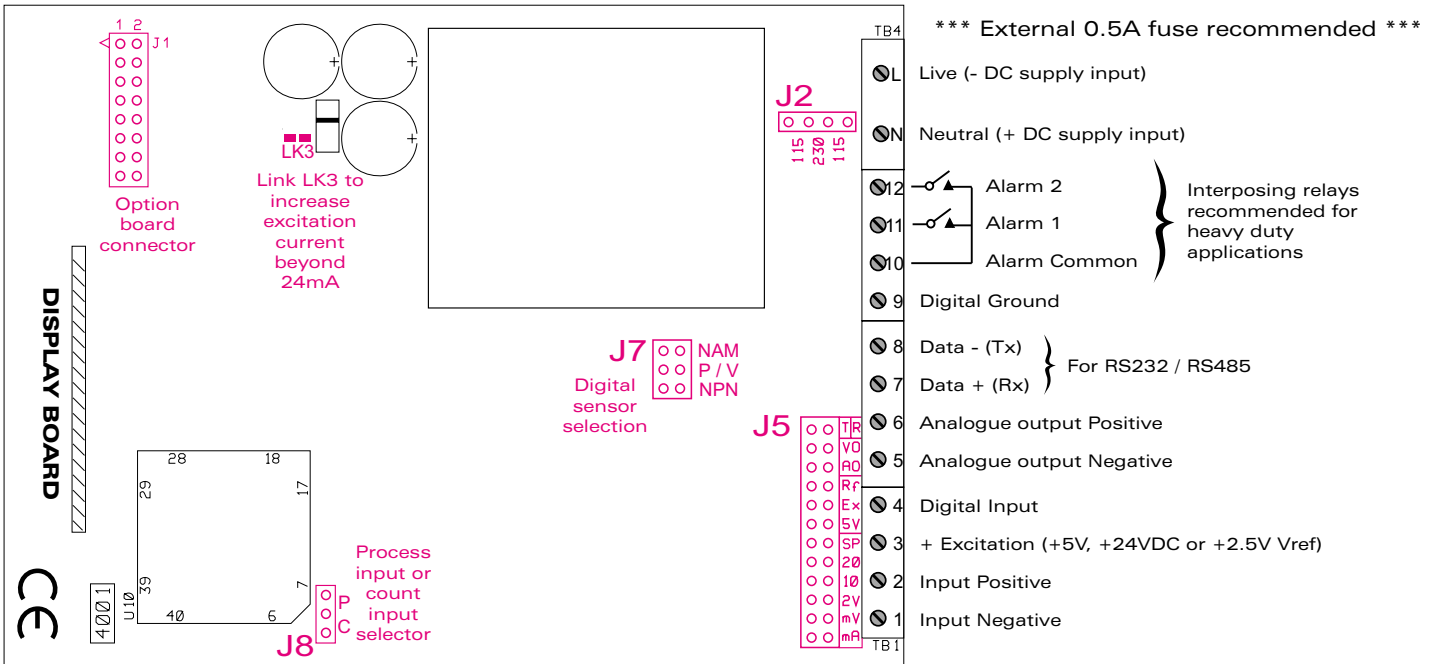
DIMENSIONS & CUTOUT



DIN 48 x 96 industrial strength single piece housing
Flame retardant ABS plastic (meets UL 94 V-0)
Front panel rating is IP65 with supplied O-ring seal

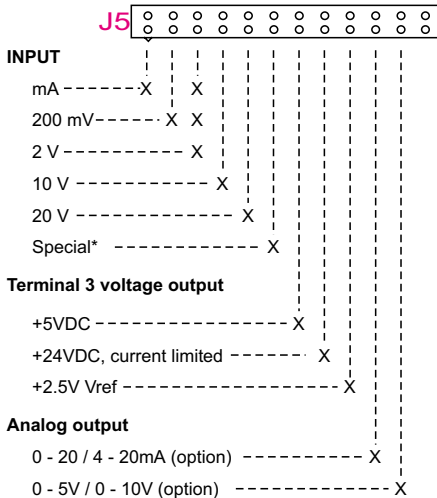
Dimension in mm

PINOUT



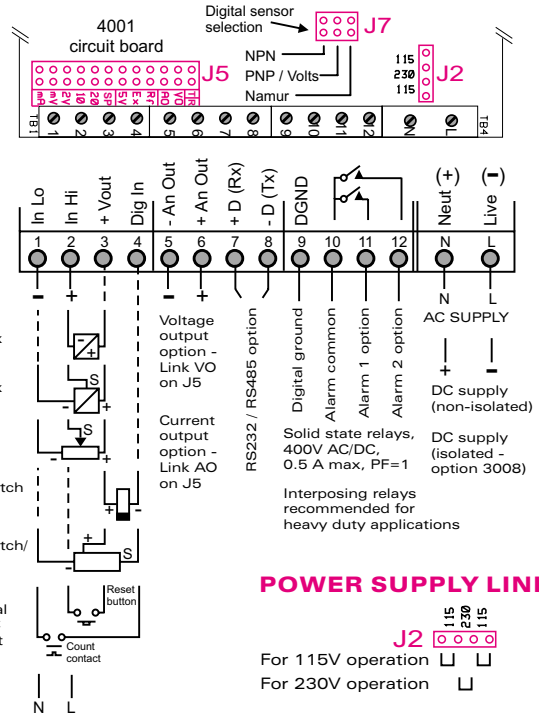
INTERNAL LINKS

NOTE : Counter reset via 'Enter' key (press for 3 seconds) or via external reset (almost instantaneous).
 NOTE : To select different proximity switch types, use the appropriate NPN, PNP or Namur link on the circuit board.

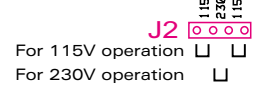


* The "special" input is normally configured for pot input. It can however be configured to order as per customer's requirements.
 ** For 2-wire NAMUR sensors, the proximity switch must be able to operate from 5V supply.

APPLICATION EXAMPLES



POWER SUPPLY LINKS



GUARANTEE

This product is guaranteed against faulty workmanship or defective material, for a period of 3 (three) years from date of delivery by DPM.

DPM undertakes to replace without charge all defective equipment which is returned to it (transportation costs prepaid) during the period of guarantee, provided there is no evidence that the equipment has been abused or mishandled in any way.

DPM reserves the right to alter any specification without notice.

E-mail : info@dpm.co.za
 Website : www.dpm.co.za



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