



These high accuracy, high quality LED indicators are used for universal process, counting and frequency applications. The -T option includes process integration / totalisation function. These indicators can be applied to most process variables with analogue & digital inputs, such as the 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 feature 'Plug & Play' technology, allowing option boards to be ordered separately & field fitted when required.

The Model 5001 is a 5 ½ digit version for both rate and total displays, while the Model 8001 offer a 5 ½ rate display and an 8 digit totalising display.

### 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
- Bright red LED displays. 14.2mm height for Model 5001 and 10mm height for Model 8001
- Model 5001 : -199999 to 199999 display counts for rate and total display
- Model 8001 : -199999 to 199999 display counts for rate (99999999 counts for total)
- Model 5001-T or 8001-T: process totalising option
- 24VDC supply for 2 / 3 wire transmitters
- Process inputs, frequency & counting functions
- Process x frequency for kW, mass flow applications etc.
- Keypad lockout standard to prevent authorised access to programming menu
- Meets European EMC directive 89/336/EEC & Low Voltage directive 73/23/EEC
- 3 year guarantee

### OPTIONS

3000	Lineariser (square root / sphere / & more)	3010	95-265V AC/DC isolated supply
3001-P	Two setpoints (solid-state relays)	3012	Peak / valley hold
3001-M	Two setpoints (electro-mechanical relays)	3013	RS 232 serial interface
3002	RS 485 serial interface	3014	Auto zero (with remote zero)
3003	0 - 20mA / 4 - 20 mA analogue output	3017-P	3 setpoints (solid-state relays)
3004-P	One setpoint (solid-state relays)	3017-M	3 setpoints (electro-mechanical)
3004-M	One setpoint (electro-mechanical relays)	3018-P	4 setpoints (solid-state relays)
3006	Isolated outputs (order with 3002/3/7/13)	3018-M	4 setpoints (electro-mechanical)
3007	0 - 10V analogue output	3020	Ultra bright Red LED display
3008	12 / 24V galvanic isolated DC supply	3026	Display hold
3009	Parallel BCD output		

**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.  
**NOTE :** Option 3012 & 3014 cannot be ordered together.

# SPECIFICATIONS

## DISPLAY & OPERATION

Model 5001	Bright red LED display 14.2mm height
Model 8001	Bright red LED display 10mm height
Model 5001	-199999 to 199999 for rate & total display
Model 8001	-199999 to 199999 for rate, 99999999 counts for total
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 $\Omega$	0 - 2 V	Input impedance 100 k $\Omega$
4 - 20 mA	Input impedance 100 $\Omega$	0 - 10 V	Input impedance 500 k $\Omega$
0 - 200mV	Input impedance 100 k $\Omega$	0 - 20 V	Input impedance 1 M $\Omega$
Potentiometer	Input impedance 100 k $\Omega$		

These inputs are all standard and are link selectable, with programmable zero, span and decimal point.

## ANALOGUE PERFORMANCE

Accuracy & linearity	0.05% of full scale, $\pm 1$ 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 00.05 to 1999.99. Hz or RPM programmable.  
Frequency damping of 0, 0.5, 1.1 and 4.5 seconds programmable  
Counter reset via 'Enter' key (press for 3 seconds) or via external reset (instantaneous).  
NPN / PNP / NAMUR proximity switch selectable via jumper links.

## (-T) TOTALISING FUNCTION

Both models	Process integration/totalisation with factor adjustment
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## 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 $\Omega$  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 $\Omega$ maximum (current is source, not sink)
Voltage analog output load	1 k $\Omega$ 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
Electro-mechanical relay form type	Form C (change-over contact)
Solid-state relay rating	400V AC/DC, 0.5A, power factor 1
Solid-state relay 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  
Isolation to input  
Capabilities - Digibus protocol  
Capabilities - Ascibus protocol

RS-232 or RS-485, 2400, 4800, 9600 & 19200 baud  
Optional, 1500V isolation (order option 3006)  
Full remote control, except for field setup  
- 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

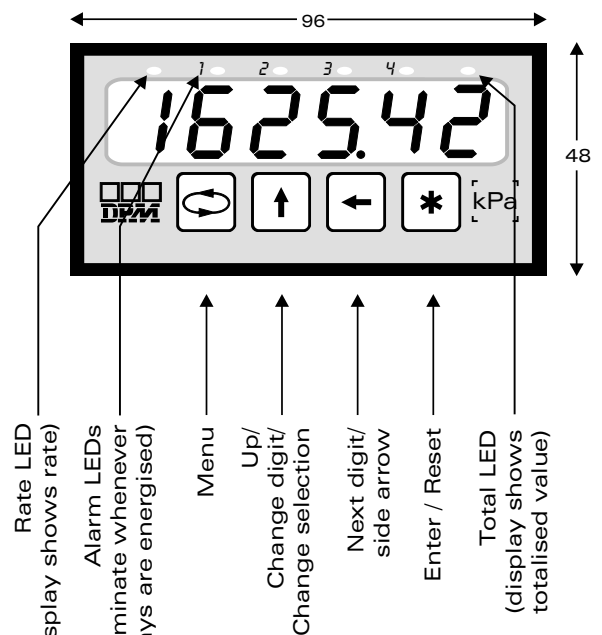
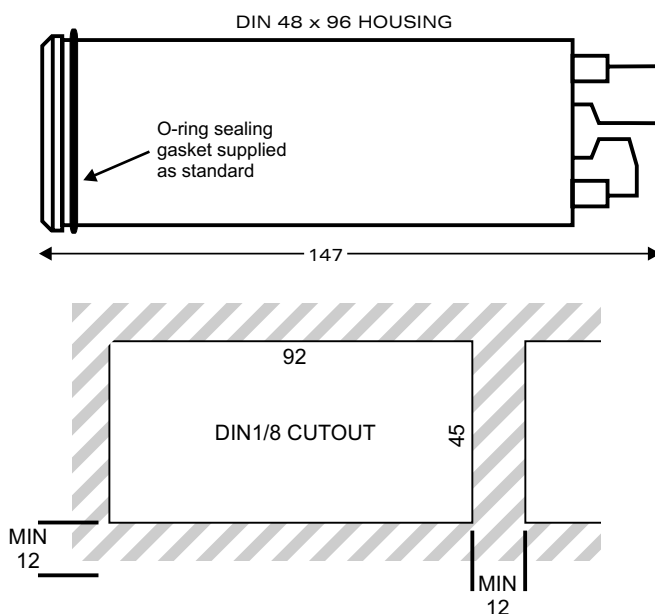
Option modules (see page 1)

**MODEL 5001 - 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  
Set points : 2 set points with solid state relays

## FRONT PANEL

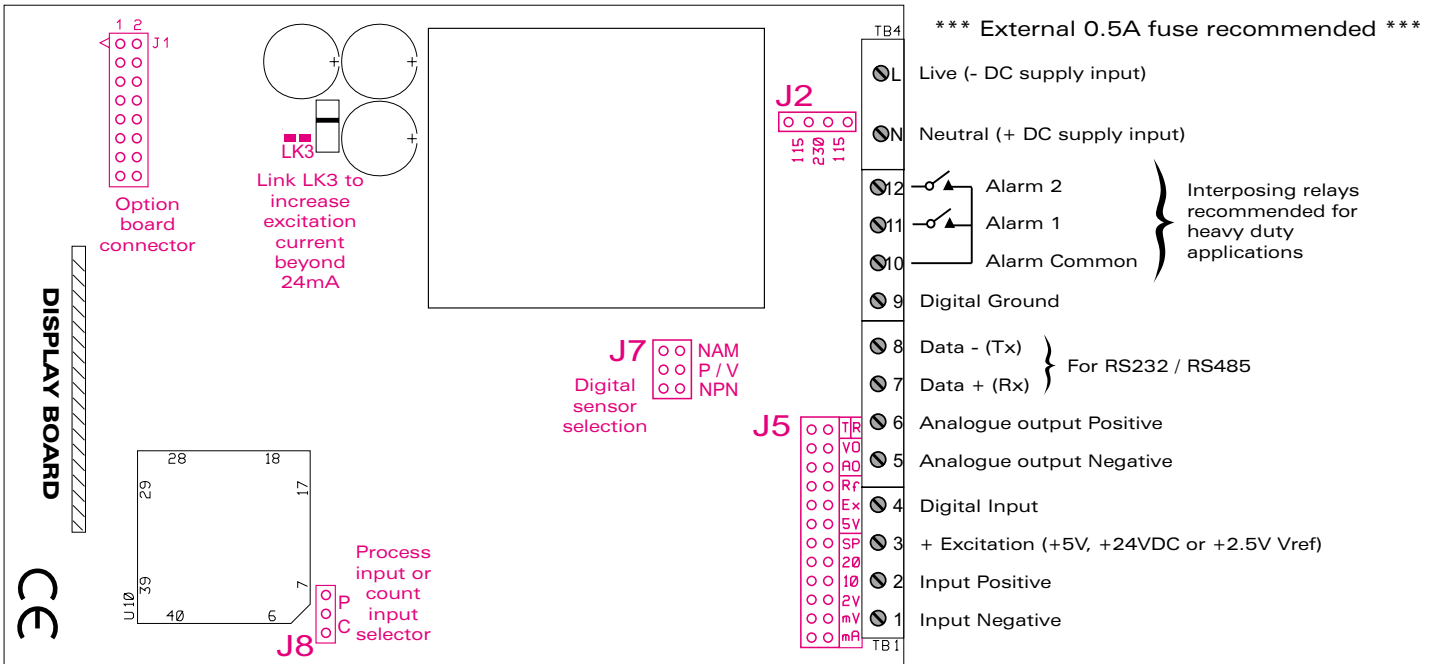
## DIMENSIONS & CUTOUT



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

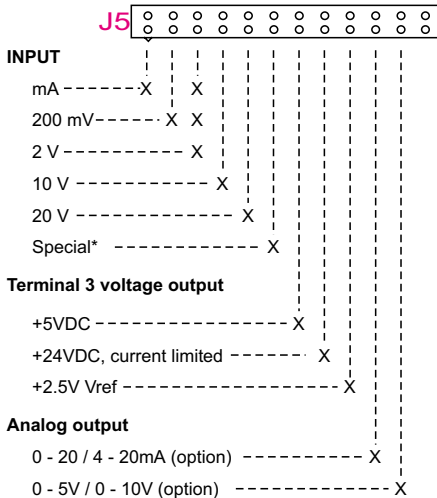
Dimension in mm

# PINOUT



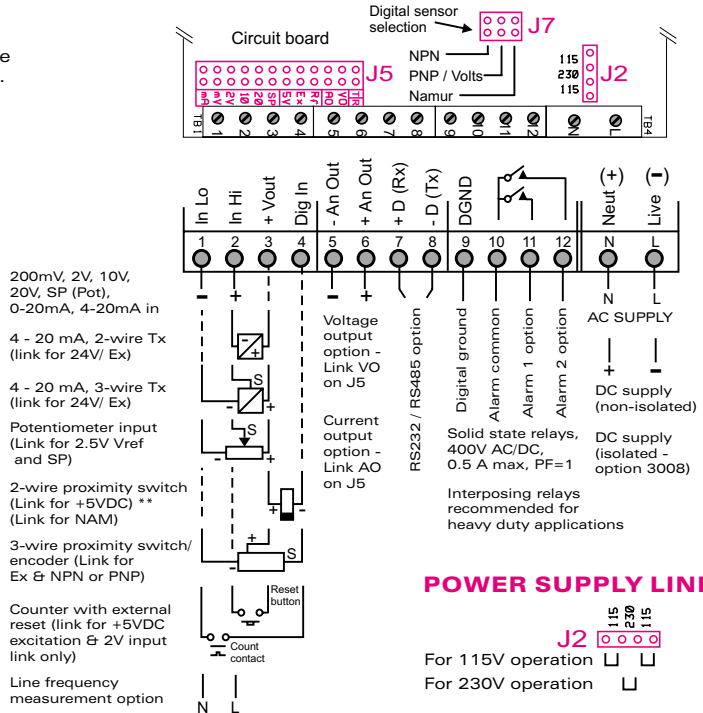
## INTERNAL LINKS

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.

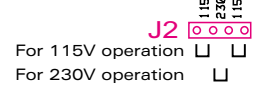


\* The "special" input is normally configured for pot input. It can however be configured to order as per customer's requirements.  
 \*\* For 2-wire NAMUR sensors, the proximity switch must be able to operate from 5V supply.

## 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.

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