

PROGRAMMABLE 4 / 5½ DIGIT LOAD CELL INDICATORS

Model 4004/5004



Processing your future



The Model 4004 or 5004 LED load cell indicator is an easy-to-use precision programmable digital indicator for load cell & strain gauges applications. Inputs to the instrument include load cell input (6 wire) and two digital inputs for remote tare and remote peak hold reset (optional). The excitation includes sense feedback to compensate for cable loss. Digital filtering for better stability and tare function is included as standard. Options include programmable analog output, set-points up to four alarms, peak or valley hold, RS232/485 serial interfaces & more.

The Model 5004 has additional features. It has a 20-bit analog to digital converter for ultra-high resolution, and the excitation is user selectable for normal or barriered applications. Display increment (steps) is standard. A switching power supply is standard to power four load cells.

A feature of these programmable indicators is the calibration method. The instrument can be pre-calibrated without load cell connections for zero & full scale values, & then on-site calibration can be done for deadweight offset & span calibration (single point test weight trim).

FEATURES

- ❑ Model 4004: -1999 to 9999 display counts, 14.2 mm height bright red LED display
- ❑ Model 5004: -199999 to 199999 display counts, 14.2 mm height bright red LED display
- ❑ Model 5004 only: User selectable excitation for normal or barriered applications
- ❑ Model 5004 only: 95-265V AC/DC power supply to power 4 load cells
- ❑ 1/8 DIN enclosure (Bezel 48 x 96 mm with 45 x 92 cut-out), UL 94 V-0 flame retardant
- ❑ Front panel IP 65 / NEMA 4 / UL Type 4 rating with o-ring seal provided.
- ❑ Simple on-site calibration for deadweight & single point span calibration
- ❑ 4-wire bipolar excitation (6 wires total)
- ❑ Meets European EMC directive 89/336/EEC & Low Voltage directive 73/23/EEC
- ❑ 3 year guarantee

OPTIONS

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| 3001-P 2 set points (solid-state relays) | 3012 Peak or valley hold (min or max hold) |
| 3001-M Two setpoints (electro-mechanical relays) | 3013 RS 232 serial interface |
| 3002 RS 485 serial interface | 3016 Load cell booster (up to 6 load cells) |
| 3003 0 - 20 mA / 4 - 20 mA analogue output | 3017-P 3 setpoints (solid-state relays) |
| 3004-P 1 set point (solid-state relay) | 3018-M 3 setpoints (electro-mechanical relays) |
| 3004-M 1 set point (electro-mechanical relay) | 3018-P 4 setpoints (solid state relays) |
| 3006 Isolation (order with 3002/3/7/13) | 3018-M 4 setpoints (electro-mechanical relays) |
| 3007 0 - 10V analogue output | 3020 Ultra bright red LED display |
| 3008 Galvanic isolated DC supply (12V / 24V) | 3022 Vertical bar graph display (4004 only) |
| 3009 Parallel BCD output | 3025 Key pad lock |
| 3010 95-265V AC/DC supply (for 4004 only) | 3026 Display hold |

SPECIFICATIONS

DISPLAY

Display on Model 4004	4 digit (-1999 to 9999) bright red LED, 14.2mm high
Display on Model 5004	5½ digit (-199999 to 199999) bright red LED, 14.2mm high

OPERATION

Setup and calibration	Full digital with visual prompting in plain messages
Memory retention	Full non-volatile operation
Digital filter	Low pass with user selectable values

INPUT AMPLIFIER

Sensitivity adjust (Model 4004)	1 mV/V, 2 mV/V, 3 mV/V and 10 mV/V (2 mV/V default)
Sensitivity adjust (Model 5004)	Up to 3.00 mV/V full scale (2.00 mV/V default)
Zero drift	0.1µV / °C typically
Span drift	20 ppm / °C typically
Input impedance	20 MΩ
Accuracy & linearity	0.05% of full scale, ± 1 display count
Warm up time	20 minutes
Noise	< 0.5 µV p-p

EXCITATION - MODEL 4004

10V	1 x 350Ω load cell ONLY
10V	4 x 1000Ω load cells
Load cell connection	6 wire + shields (sense included)

EXCITATION - MODEL 5004 (LINK SELECTABLE)

10V	Up to 4 x 350Ω load cells (default for most applications)
10V	Up to 8 x 1000Ω load cells
5V	Up to 8 x 350Ω load cells
5V	For barriered applications up to 2 load cells
3.3V	For barriered applications up to 4 load cells
Load cell connection	6 wire + shields (sense included)

A/D CONVERTER - MODEL 4004

A/D Type	16 bit dual slope
Resolution	40 000 internal counts
A/D conversion rate	Approximately 5 per second

A/D CONVERTER - MODEL 5004

A/D Type	20 bit sigma delta
Resolution	1 000 000 internal counts
A/D conversion rate	Approximately 5 per second

DIGITAL INPUTS

Digital input no. 1	Remote input for tare
Digital input no. 2 (optional)	Remote input for peak / valley reset

ANALOGUE OUTPUT OPTION

Analog output isolation	Optional, 1500V input/output isolation (order option 3006)
Analog output accuracy	0.1% of full scale
Analog output resolution	12 bits
Analog output temp. coefficient	20 ppm / °C typically
Current analog output load	500 Ω maximum (current is source, not sink)
Voltage analog output load	1 kΩ 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)

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 - Optional on 5004: Time & date stamping (contact factory)

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

REGULATORY COMPLIANCE

Regulatory requirements	Complies with EC Directives 89/336/EEC & 73/23/EEC
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POWER SUPPLY OPTIONS

Standard power supply on Model 4004:
115 / 230 VAC \pm 10%, voltage link selectable, 3.5 VA, 47-63Hz, powers 1 load cell.

Standard power supply on Model 5004:
95V - 255V AC / DC isolated supply, 10 VA max, powers 4 load cells.

Optional power supplies:
Option 3008-12 : Internal 12 V DC isolated supply, 10 VA typ, powers 4 load cells.
Option 3008-24 : Internal 24 V DC isolated supply, 10 VA typ, powers 4 load cells.

Option 3010 : Internal 95V - 255V AC/DC isolated supply, 10 VA max, powers 4 load cells.
Option 3016 : External 95V - 255V AC/DC, powers 6 loadcells.

ORDERING EXAMPLE

When ordering, please specify :

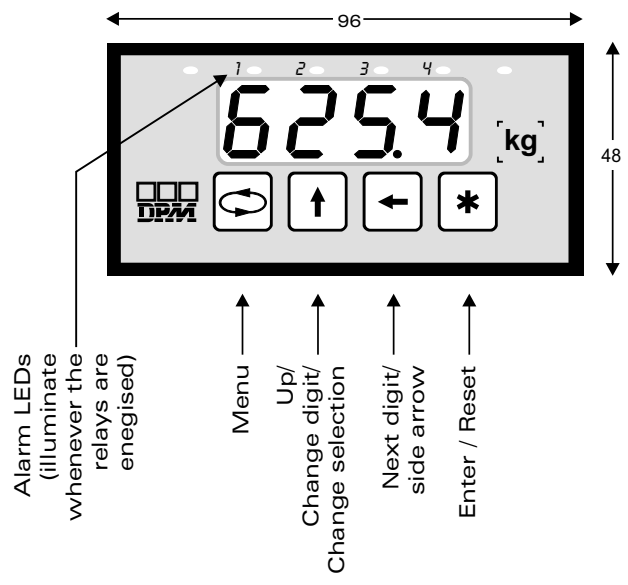
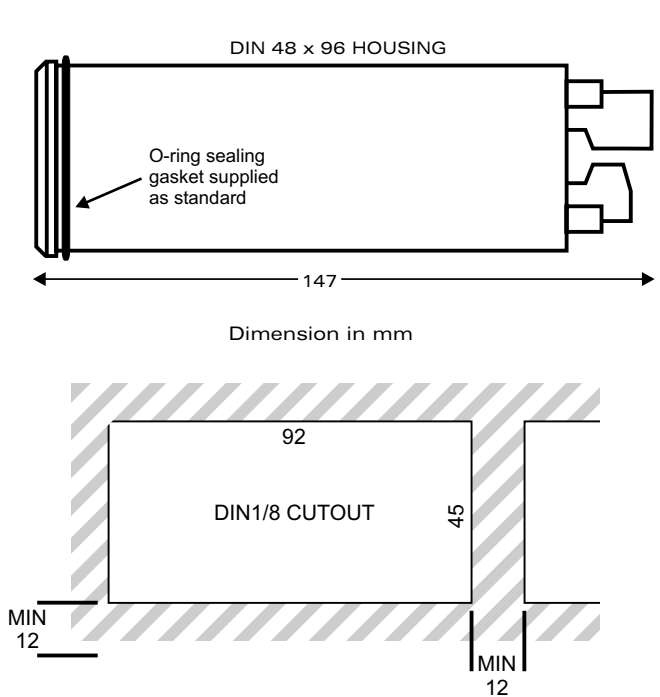
- Supply voltage
- Load cell sensitivity in mV/V
- Load cell capacity (rating)
- Number of load cells in parallel
- Analog output range if applicable

Option modules (see page 1)

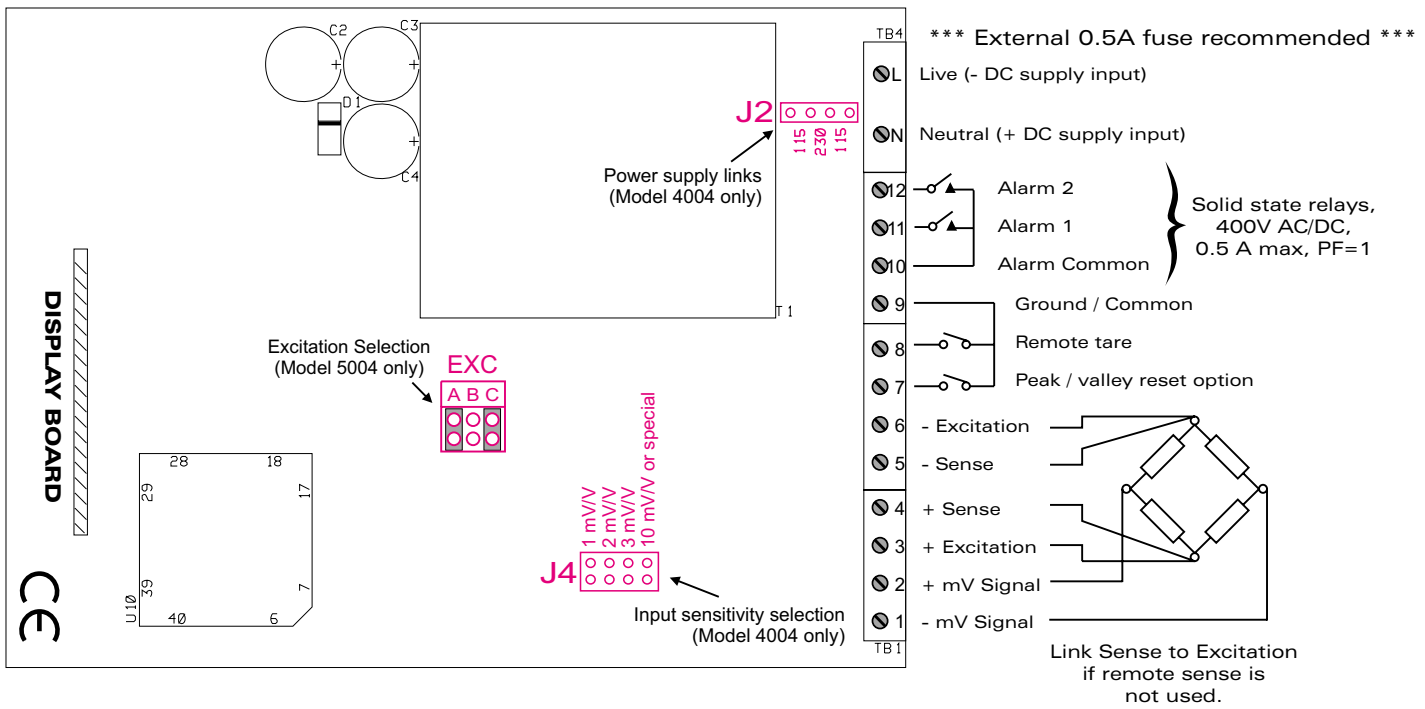
MODEL 5004 - 3001P - 2 mV/V

"5½ digit loadcell indicator with
dual alarm, 2mV/V sensitivity"

DIMENSIONS, CUTOUT & WIRING



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



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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 Website : www.dpm.co.za



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