



ANDREAS LANG GmbH

Programmable 4 / 5 ½ Digit Load Cell Indicators Model DPM-4004 AL Model DPM-5004 AL



DESCRIPTION

Model DPM-4004 AL & Model DPM-5004 AL

The Model **DPM-4004 AL** or **DPM-5004 AL** 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 alarm, peak or valley hold, RS232/485 serial interfaces & more.

The Model DPM-5004 AL 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 instruments can be pre-calibrated without load cell connections for zero & full scale values, & then on-site calibration can be done for dead-weight offset & span calibration (single point test weight trim).

FEATURES

- Model DPM-4004 AL: -1999 to 9999 display counts, 14.2 mm height bright red LED display
- Model DPM-5004 AL: -199999 to 199999 display counts, 14.2 mm height bright red LED display
- Model DPM-5004 AL only: User selectable excitation for normal or barriered applications
- Model DPM-5004 AL only: 95-265V AC/DC power supply to power 4 load cells
- 1/8 DIN enclosure (Bezel 48 x 96mm 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 dead-weight & single point span calibration
- 4-wire bipolar excitation (6 wires total)
- Meets European EMC directive 89/336/EEC & Low Voltage directive 73/23/EEC

OPTIONS

DPM-3001-P AL	2-setpoints (solid-state relays)	DPM-3012 AL	Peak or valley hold (min or max hold)
DPM-3001-M AL	2-setpoints (electro-mechanical relays)	DPM-3013 AL	RS 232 serial interface
DPM-3002 AL	RS485 serial interface	DPM-3016 AL	Load cell booster (up to 6 load cells)
DPM-3003 AL	0 – 20mA / 4 – 20mA analogue output	DPM-3017-P AL	3-setpoints (solid-state relays)
DPM-3004-P AL	1-setpoint (solid-state relay)	DPM-3017-M AL	3-setpoints (electro-mechanical)
DPM-3004-M AL	1-setpoint (electro-mechanical relays)	DPM-3018-P AL	4-setpoints (solid-state relays)
DPM-3006 AL	Isolation (order with 3002/3/7/13)	DPM-3018-M AL	4-setpoints (electro-mechanical)
DPM-3007 AL	0 – 10V analogue output	DPM-3020 AL	Ultra bright red LED display
DPM-3008 AL	Galvanic isolated DC supply (12 / 24V)	DPM-3022 AL	Vertical bar graph display (4004 only)
DPM-3009 AL	Parallel BCD output	DPM-3025 AL	Key pad lockout
DPM-3010 AL	95-265V AC/DC supply (for 4004 only)	DPM-3026 AL	Display hold

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Load Cell Indicator
Model DPM-4004 AL
Model DPM-5004 AL**

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SPECIFICATIONS

DISPLAY

Display on Model DPM-4004 AL	4 digit (-1999 to 9999) bright red LED, 14.2mm high
Display on Model DPM-5004 AL	5 ½ 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 DPM-4004 AL)	1 mV/V, 2mV/V, 3 mV/V and 10 mV/V (2 mV/V default)
Sensitivity adjust (Model DPM-5004 AL)	up to 3.00 mV/V full scale (2.00 mV/V default)
Zero drift	0.1 μ V / °C typically
Span drift	20 ppm / °C typically
Input impedance	20M Ω
Accuracy & linearity	0.05% of full scale, \pm 1 display count
Warm up time	20 minutes
Noise	< 0.5 μ V p-p

EXCITATION – MODEL DPM-4004 AL

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

EXCITATION – MODEL DPM-5004 AL (LINK SELECTABLE)

10V	Up to 4 x 350 Ω load cells (default for most applications)
10V	Up to 8 x 1000 Ω load cells
5V	Up to 8 x 350 Ω 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 DPM-4004 AL

A/D Type	16 bit dual slope
Resolution	40000 internal counts
A/D conversion rate	Approximately 5 per second

A/D CONVERTER – MODEL DPM-5004 AL

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

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

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**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 DPM-3006 AL)
Capabilities – DIGIbus protocol	Full remote control, except for field setup
Capabilities – ASCIIbus protocol	- continuous output approximately 5 x second - output on demand via print button - output on demand via serial request - Optional on DPM-5004 AL: Time & date stamping (contact factory)

ENVIRONMENTAL

Operating temperature range	-10°C to +50°C
Service temperature range	-15°C to +60°C
Storage temperature range	-40°C 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

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

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

Optional power supplies:

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

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

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 DPM-5004 AL – DPM-3001-P AL – 2mV/V

„5 ½ digit load cell indicator with
dual alarm, 2mV/V sensitivity“

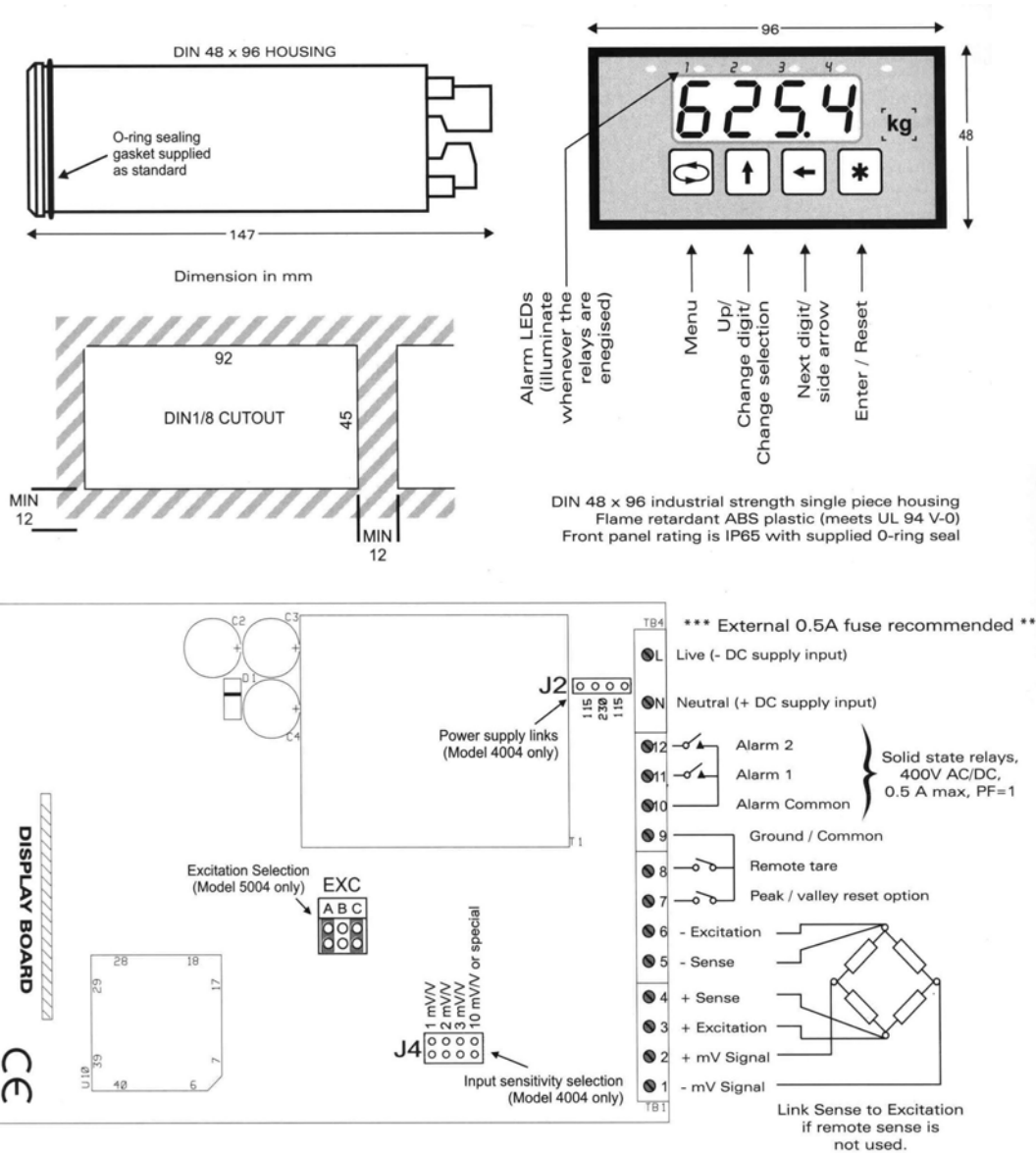
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DIMENSIONS, CUTOUT & WIRING



GUARANTEE

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

Andreas Lang GmbH 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. Andreas Lang GmbH reserves the right to alter any specification without notice.

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