



ANDREAS LANG GmbH

Programmable Counter / Speed / Frequency / Timer / Totaliser / Period / Clock / Position Indicator Model DPM-5012 AL



DESCRIPTION

The Model **DPM-5012 AL** is a 6 digit (-199999 to 999999) low-cost universal programmable indicator for use in all types of frequency & counting applications. The indicator has uni-polar & bi-polar pulse / frequency inputs for counting, frequency / speed (dual channel), period, flow, timing, totalising & positioning applications. It can be used in conjunction with most standard pulse / frequency generating sensors. Sensor excitation is standard & the output voltage is link selectable. Various options are available (see option list below). Selected options now feature "Plug & Play" technology, allowing option boards to be ordered separately & field fitted when required.

MODELS

Three variations of this instrument are available, depending on the required functionality:

Model 5012	6 digit (-199999 to 999999)	Freq, Period, Count, Rate, Totaliser, Event timer
Model 5012-C	6 digit (-199999 to 999999)	Real time clock + all Model 5012 features
Model 5012-Q	6 digit (-199999 to 999999)	Quadrature input + all Model 5012 features

FEATURES

- 1/8 DIN enclosure (45 x 92mm cut-out), UL 94 V-0 flame retardant, 147mm depth
- Front panel IP 65 / NEMA 4 / UL Type 4 rating, bezel 48x96mm
- -199999 to 999999 display counts, 14.2mm bright red LED display
- 24V DC supply for encoders & proximity switches
- Counting, frequency, speed, period, timing, totalising & positioning functions
- Dual channel frequency inputs (can be added, subtracted or ratioed)
- "Plug & Play" feature available with selected options
- Keypad lockout option available at no extra charge
- Meets European EMC directive 89/336/EEC & Low Voltage directive 73/23/EEC
- 3 year guarantee

OPTIONS

DPM-3001-P AL	2-setpoints (solid-state relays)	DPM-3010 AL	95-265V AC/DC power supply
DPM-3001-M AL	2-setpoints (electro-mechanical relays)	DPM-3012 AL	Peak or valley hold (min or max hold)
DPM-3002 AL	RS485 serial interface	DPM-3013 AL	RS 232 serial interface
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	Isolated outputs (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	12 / 24V galvanic isolated DC supply	DPM-3023 AL	Pulse output
DPM-3009 AL	Parallel BCD output	DPM-3025 AL	Keypad lockout

NOTE: Most of the above options are factory fitted. Customer / field fitted options are available as "Plug & Play" boards and software activated options. Contact factory for more information.

NOTE: Option DPM-3009 AL cannot be ordered together any alarm options.

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SPECIFICATIONS

GENERAL

Setup and calibration	Full digital with visual prompting in plain messages
Memory retention	Full non-volatile operation
Accuracy (frequency)	0.01% (scaling = 1), or 1 count
Internal oscillator	11.059 MHz precision
Real time clock drift	0.8 seconds per day max
Real time clock backup	30 days typically

FREQ / SPEED / PERIOD / COUNT

Input frequency range	0.15Hz – 15000Hz. Max. 0.01Hz res. Period max 1 second.
Pulse amplitude	50mV up to 24V maximum, uni-polar or bi-polar.
Frequency calculation time	5 milliseconds (no averaging)
Frequency averaging	None, 0.5, 1.1 and 4.5 seconds programmable
Counter reset vi "Enter" key (press for 3 seconds) or via external reset (instantaneous).	
Selectable for most standard sensors by jumper links and differing connections.	
Jumper links for hysteresis selection.	

SENSOR EXCITATION (FOR ENCODERS, PROXIMITY SWITCHES ETC)

Link selectable for:	
24V DC (17-26V), current limited to 25mA. Optional 50mA	
12V DC (10-13V), maximum 50mA	
5V DC \pm 1%. Maximum 50mA	
Option: 24 VDC (17-26V), increased current capacity 100mA with option DPM-3010 AL.	

ANALOGUE OUTPUT OPTION

Analogue output isolation	Optional, 1500V input/output isolation (order option DPM-3006 AL)
Analogue output accuracy	0.1% of full scale, 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

SET POINT OPTIONS

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

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

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

NOTE: Digital inputs are available as standard for reset, preset, start, stop and other functions. A potential free contact is required to operate these digital inputs (active is low). Digital input functions differ depending on mode of operation.

<div style="font-size: 48pt; text-align: center;">E</div>	Programmable Counter / Speed / Frequency / Timer / Totaliser / Period / Clock / Position Indicator Model DPM-5012 AL	Andreas Lang GmbH Industrievertretung & Service Bahnhofstraße 33 D - 61137 Schöneck Telefon: +49 (0) 6187 88 54 +49 (0) 6187 88 60 Telefax: +49 (0) 6187 88 71 WebSite: www.alanggmbh.de E-Mail: info@alanggmbh.de
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PROGRAMMABLE SETTINGS

Channel display	: Ch1, Ch2, Ch1 + Ch2, Ch1 – Ch2, Ch1/Ch2
Rate / total display	: Selectable via front keypad
Frequency / counting factor	: 000.001 to 999.999
Frequency / counting scaler	: 10.000, 1.000, 0.100, 0.010, 0.001
Decimal point	: Selectable on any digit
Filtering	: None, 0.5, 1.1, 4.5 seconds selectable
Frequency mode	: Normal or inverse (period) display
Counter features	: Reset (count up) or Preset (count down)
Event timer	: HHHH.MM or HH.MM.SS or SSSSSS or SSSSS.S or SSSS.SS
Real time clock	: 12h or 24h mode; xternal snyc & preset

* Analog output zero	: -199999 to 999999 (for 0 – 20 / 4 – 20mA or 0 – 10V out)	
* Analog output span	: -199999 to 999999	
* Alarm hysteresis	: 0 to 255 (default 1)	
* Alarm delay	: 0 to 255 seconds (default 0)	
* Alarm relay settings	: Selectable HIGH or LOW alarm	
* Alarm relay state	: Selectable normally open or normally closed	
* Protocol options	: DPM-AL's DIGIbus (default) or ASCIIbus	
* RS485 address	: 0 to 99	
* RS232 / RS485 baud rate	: 2400, 4800, 9600 (default), 19200	* indicates option

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

REGULATORY COMPLIANCE

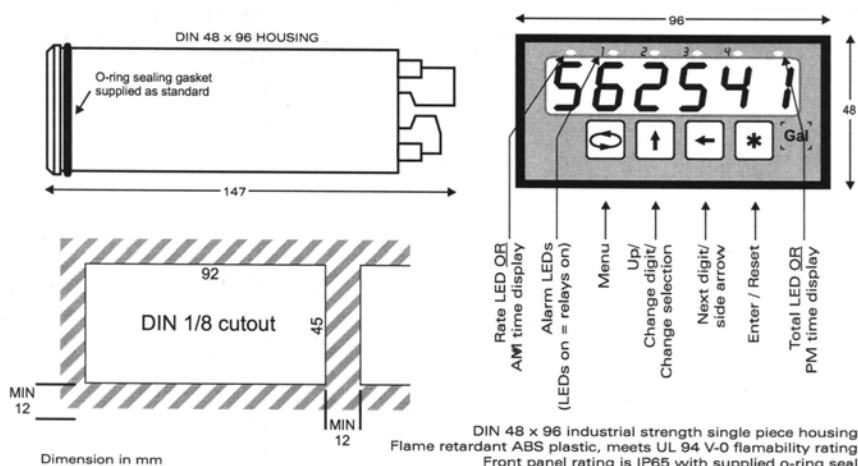
Regulatory requirements	Complies with EC Directives 89/336/EEC & 73/23/EEC
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ORDERING EXAMPLE

Option modules (see page 1)
MODEL DPM-5012-Q AL – DPM-3001-P AL – DPM-3003 AL

Model type :	Quadrature input
Aux supply:	230 VAC
Analogue output :	4-20mA
Alarm set points :	2 set points with solid-state relays

FRONT PANEL DIMENSIONS & CUTOUT

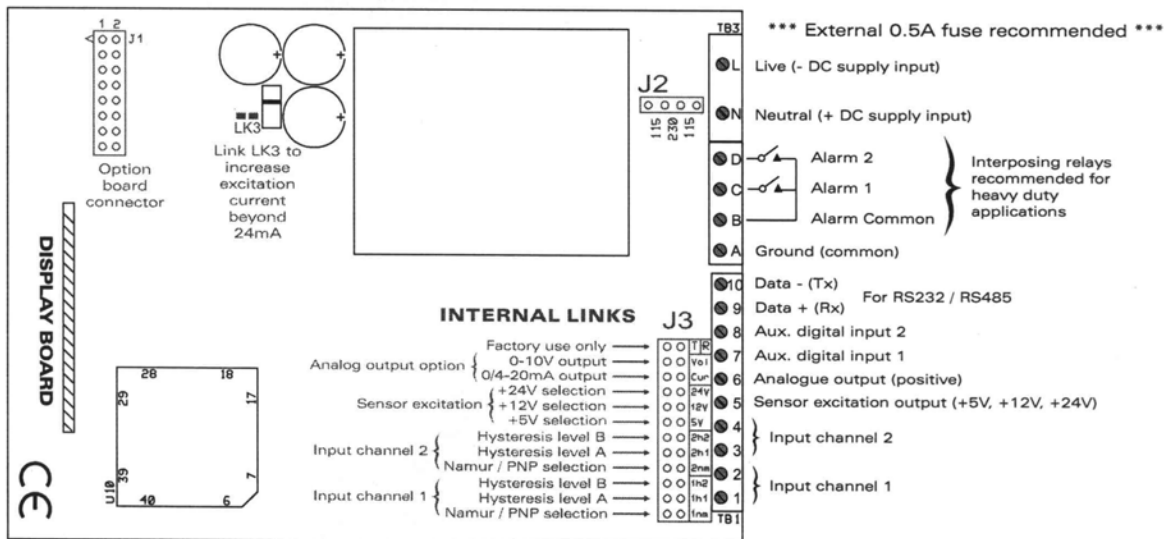


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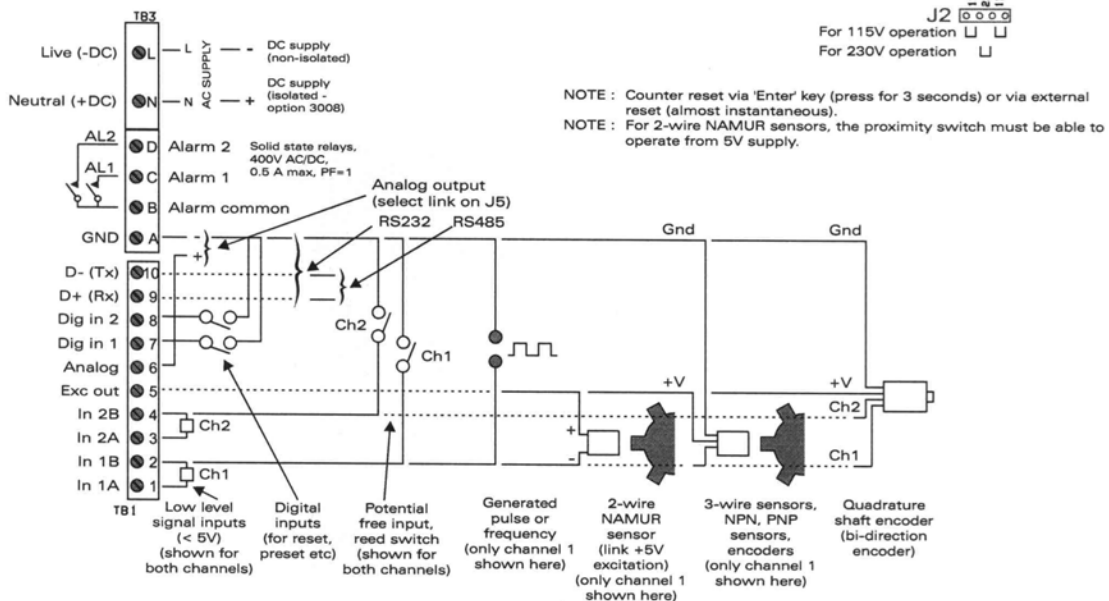
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PINOUT



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 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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