



The Model 5012 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.

Options include analog output, alarm setpoints up to 4 alarms, BCD output, RS232 or RS485 communications & many more. The display & analog output is rangeable from the front pushbuttons. The instrument meets the European Community EMC directive 89/336/EEC & Low Voltage Directive 73/23/EEC.

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 |

All Models offer up & down counter (with reset/preset), dual channel frequency input, which can be added, subtracted, or ratioed. Period indication is also available as standard.

Time tagging feature is available on the Model 5012-C as an option.

FEATURES

- DIN 48 x 96 enclosure, 147mm depth
- 6 digit (-199999 to 999999), 14.2mm bright red LED display
- 24VDC supply for encoders & proximity switches
- Low cost - high performance design
- Touch button ranging and setpoints
- Counting, frequency, speed, period, timing, totalising & positioning functions
- Dual channel frequency inputs (can be added, subtracted or ratioed)
- Analog output option with programmable zero & span
- RS232 & RS485 communication option.
- 'Plug & play' feature available with selected options.
- Keypad lockout available at no extra charge

SPECIFICATIONS

OPTIONS

| | | | |
|--------|---|--------|----------------------------------|
| 3001-P | Two setpoints (solid state relays) | 3010 | 95-265V AC/DC power supply |
| 3001-M | Two setpoints (electro-mechanical) | 3012 | Peak / valley hold |
| 3002 | RS 485 communications | 3013 | RS 232 communications |
| 3003 | 0 - 20mA / 4 - 20 mA analog 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) | 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 analog output | 3020 | Ultra bright Red LED display |
| 3008 | 12 / 24V galvanic isolated DC supply | 3023 | Pulse output |
| 3009 | Parallel BCD output | 3025 | 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 3009 cannot be ordered together any alarm options.

FREQUENCY / SPEED

Input frequency range : 0.15Hz - 15000Hz. Up to 0.01Hz resolution.
Pulse amplitude : 50mV up to 24V maximum, uni-polar or bi-polar.
Frequency averaging : None, 0.5, 1.1 and 4.5 seconds programmable.
Selectable for most standard sensors by jumper links and differing connections.
Jumper links for hysteresis selection.

UP/DOWN COUNTER

Maximum pulse rate of 10000 pulses per second.
Pulse amplitude from 5V to 24V maximum, uni-polar or bi-polar.
Counter reset via '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.

(FOR ENCODERS, PROXIMITY SWITCHES ETC)

SENSOR EXCITATION

Link selectable for
24 VDC (17-26V), current limited to 25mA. Optional 50mA.
12VDC (10-13V), maximum 50mA.
5VDC \pm 1%, maximum 50mA.

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

POWER SUPPLY

STANDARD

115 / 230 VAC \pm 10% (standard), link selectable, 50/60Hz, 5VA typical
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

ELECTRICAL SPECIFICATIONS

| | |
|-------------------------------|-----------------------------------|
| Accuracy | : 0.01% (scaling = 1), or 1 count |
| Internal oscillator | : 11.059 Mhz precision |
| Frequency calculation time | : 5 milliseconds (no averaging) |
| Operating temp. range | : -10°C to +50°C |
| Storage temperature range | : -40°C to +80°C |
| Humidity | : <85% non-condensing |
| Warm up time | : 10 minutes |
| Relays, electro-mechanical | : 250V AC, 30V DC, 2A, PF=1 |
| Relays, solid state | : 400 V AC/DC, 0.5A, PF=1 |
| Analog output accuracy | : 0.1% of full scale |
| Current analog output load | : 500 Ω maximum |
| Voltage analog output load | : 1 k Ω minimum |
| Memory retention (excl clock) | : Full non-volatile operation |
| Real time clock backup | : 2 years typically |
| Option 3006 isolation rating | : 1500 V |
| EC EMC & Low Volt directives: | 89/336/EEC & 73/23/EEC |

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.

PROGRAMMABLE SETTINGS

(SHOWN FOR MODEL 5012 ONLY)

- Frequency / counting factor : 10.000, 1.000, 0.100, 0.010, 0.001
- Frequency / counting scaler : 000.001 to 999.999
- Decimal point : Selectable on any digit
- Frequency resolution : Up to 0.01Hz resolution
- Frequency averaging : None, 0.5, 1.1, 4.5 seconds selectable
- Counter features : Reset (count up) or Preset (count down)

- *Analog output zero : -199999 to 999999 (for 0 - 20mA / 4 - 20mA or 0 - 10V out)
- *Analog output span : -199999 to 999999
- *Alarm values : -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
- *RS485 address : 1 to 127 available (0 is for factory use)
- *RS232 / RS485 baud rate : 2400, 4800, 9600, 19200
- *Protocol options : DPM's DIGIbus or ASCIIbus

* indicates option

ORDERING EXAMPLE

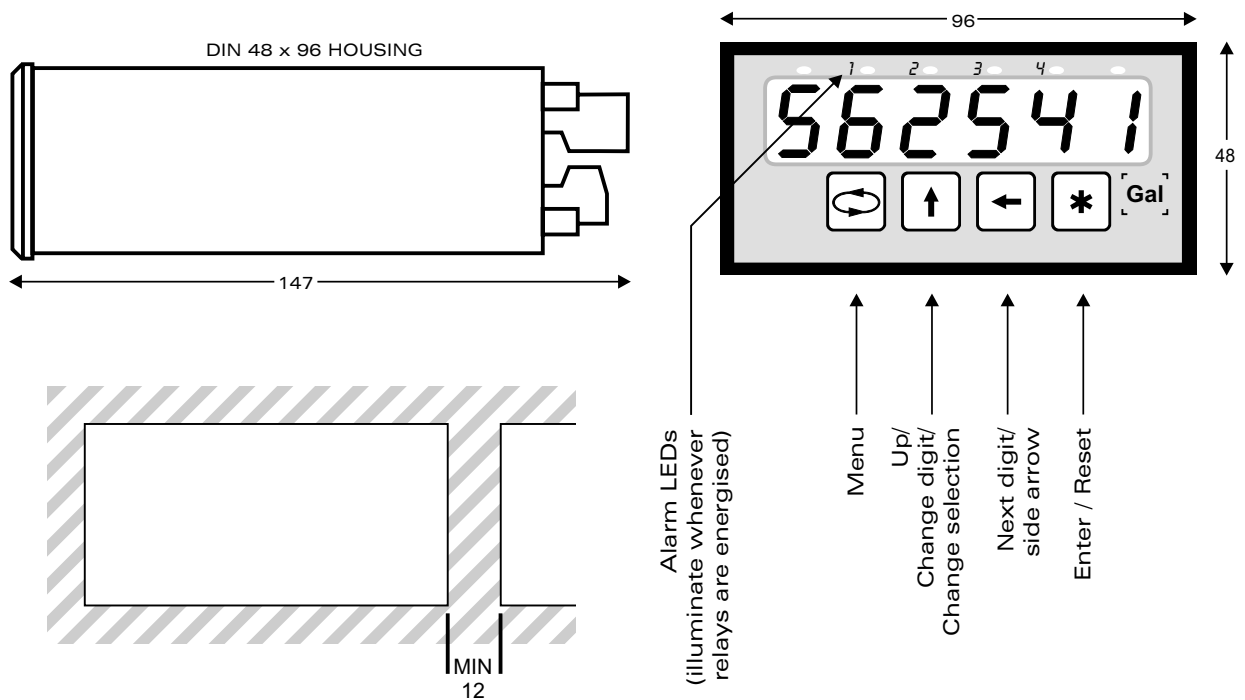
Option modules (see page 2)

MODEL 5012-Q - 3001P - 3003

- Model type : Quadrature input
- Auxiliary supply : 230 VAC
- Analog output : 4 - 20 mA
- Alarm 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 flamability rating
 IP53 rating (front panel)
 IP65 (with optional panel seal added)

Dimension in mm

