

Model 4011 Model 5011

SERIAL INPUT INDICATORS



The Model 4011 (4 digit) & Model 5011 (5½ digit) LED serial input indicators are used for remote display of serial data of numeric & alpha-numeric format. These indicators are ideal for applications where multiple slave display units are required. The indicators utilise DPM's ASCIIbus protocol for easy implementation into almost any system. The indicators come with a choice of either RS 232 input or RS 485 input for bus systems. The display may be set to flash on and off whenever the indicator does not receive valid refresh data within a specified time period.

Options include programmable analogue output, one, two, three or four alarms, BCD output and other options. The analogue output option is rangeable from the front pushbuttons.

Selected options now feature 'Plug & Play' technology, allowing option boards to be ordered separately & field fitted when required.

FEATURES

- ASCII data format for easy implementation
- Choice of RS232 or RS485 serial interface
- 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
- 14.2mm bright red LED display
- Model 4011: -1999 to 9999 display counts
- Model 5011: -199999 to 199999 display counts
- 99 addresses with selectable baud rate
- 3 year guarantee
- Keypad lockout available at no extra charge
- Meets European EMC directive 89/336/EEC & Low Voltage directive 73/23/EEC

OPTIONS

3001-P	Two set points (solid-state relays)	3010	95V-265V AC/DC isolated supply
3001-M	Two set points (electro-mechanical relays)	3012	Peak / valley hold
3003	0 -20 / 4 - 20 mA analogue output	3017-P	3 set points (solid-state relays)
3004-P	One set point (solid-state relay)	3017-M	3 set points (electro-mech. relays)
3004-M	One set point (electro-mechanical relay)	3018-P	4 set points (solid-state relays)
3006	Signal isolation (order with 3002 / 3 / 7 / 13)	3018-M	4 set points (electro- mech. relays)
3007	0-10V analogue output	3020	Ultra bright red LED display
3008	Galvanic isolated DC supply (12V / 24V)	3025	Keypad lock
3009	Parallel BCD output		

SPECIFICATIONS

DISPLAY & OPERATION

Display specification 4011	4 digit (-1999 to 9999) bright red LED, 14.2mm high
Display specification 5011	5½ digit (-199999 to 199999) bright red LED, 14.2mm high
Setup and calibration	Full digital with visual prompting in plain messages
Memory retention	Full non-volatile operation

SAMPLING PERFORMANCE

Maximum conversion rate	14 per second
Power-up / self test time	1 - 3 seconds
Warm up time	None required

SERIAL INTERFACE

Serial interface	RS-232 standard, RS-485 optional
Baud rates	2400, 4800, 9600 or 19200
Line settings	1 start bit, 7 data bits, 1 parity bit, odd parity, 1 stop bit
Address range	00 to 99

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 / °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)

POWER SUPPLY

STANDARD

115 / 230 VAC ± 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

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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PROTOCOL

The RS 232 connection allows for communications of up to 15 metres via a three wire system (Tx, Rx & GND). No hardware handshaking is required.

The RS 485 connection allows for communications of up to 1000 metres with up to 99 indicators on one RS 485 bus. This is a two wire system. For best results, the cable should be shielded.

The data format string required by the indicator is described below. 7 bit ASCII code is used.

Data Bits : Acceptable numerical ASCII characters : 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
 Acceptable lower case ASCII alphanumeric : b, c, d, g, h, i, n, o, r, t, u, y
 Acceptable upper case ASCII alphanumeric : A, C, E, F, I, J, L, P, S, U

The protocol format is : # A A S D D D D D D D D P CR LF

where : # = start of message
 : A A = Instrument address. ASCII 00 to 99. 00 is default.
 : S = sign (polarity) (ASCII "+" or "-" or blank/space) Note (1)
 : D = data bits (data for 8 numerals / letters) Note (2)
 : P = decimal point position. ASCII 0 to 8.
 : CR = ASCII carriage return
 : LF = ASCII line feed

Note 1: ASCII "blank/space" must be transmitted if alphanumeric data is to be transmitted. This allows the indicator to hold the previous numeric value while giving the ability to display a text message.

Note 2 : This protocol allows for future expansion. Therefore if Model 4011 is used, the first four digit data will be ignored as only 4 digits can be displayed. Similarly, if the Model 5011 is used, the first 2 digit data will be ignored as only 6 digits can be displayed.

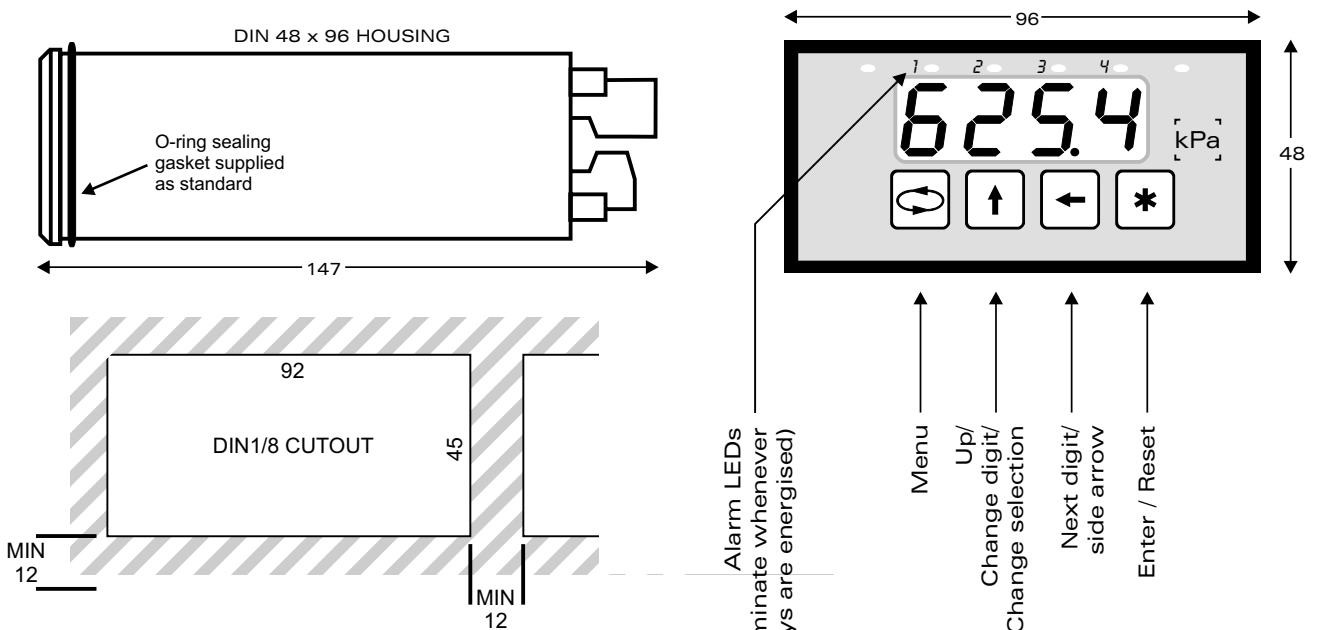
ORDERING EXAMPLE

Option modules (see front page)

MODEL 5011 - 3001P - 3003 - RS 232

Model : 5½ digit protocol reader
 Aux Supply : 230 VAC
 Analogue output : 4 - 20 mA = 0 - 250.0 kPa
 Set points : 2 set points with solid-state relays
 Interface method : RS 232 input required

FRONT PANEL DIMENSIONS & CUTOUT

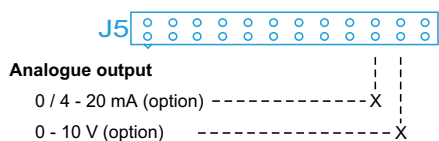


DIN 48 x 96 industrial strength single piece housing
 Flame retardant ABS plastic (meets UL 94 V-0)
 Front panel rating is IP65 with supplied O-ring seal

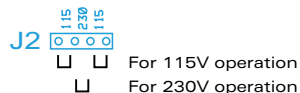
Dimension in mm

PINOUT

INTERNAL LINKS

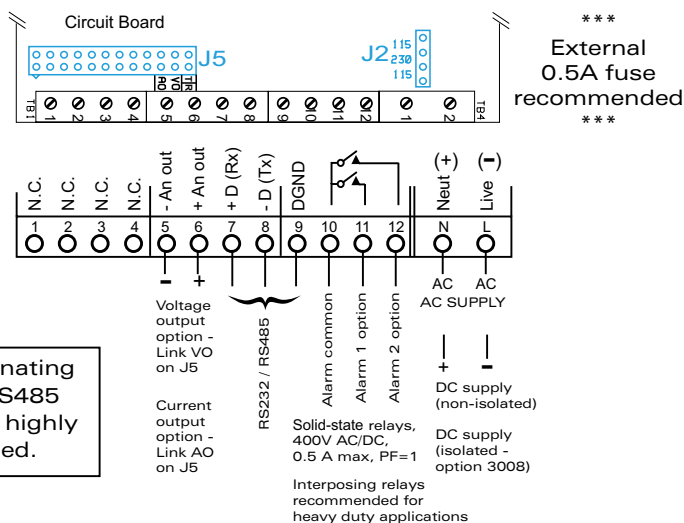


POWER SUPPLY LINKS



Use of a terminating resistor for RS485 applications is highly recommended.

APPLICATION EXAMPLES



COMPUTER CONNECTIONS

Should the serial input to the indicator come from a personal computer, the TX terminal of the DPM should be connected to PIN 3 of the 9 / 25 pin COM port of the computer. The RX terminal of the DPM should be connected to PIN 2 of the 9 / 25 pin COM port. The GND terminal should be connected to PIN 5 of the 9 pin COM port or to PIN 7 of the 25 pin COM port.

GUARANTEE

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

Instrotech 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.

Instrotech reserves the right to alter any specification without notice.



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