



PRODUCT SPECIFICATION

DIGITAL INDICATOR SERIES 320



GENERAL DESCRIPTION

The 320 Series is a range of universal digital process indicators, which accept over 20 common industrial inputs.

A wide range of options is available enabling the 320 to be used in a variety of applications with 4 software alarms; optional 0-10V, 4-20mA or 0-20mA isolated re-transmission; bridge excitation; and serial digital communications.

The sensor type and range are user configurable, either from the front panel or via the optional serial communications port, which can be set to read only if required. All ranges are calibrated which means that the user can change quickly and easily from one sensor type to another. The re-transmission can be any part of the incoming range, allowing the 320 to be used as a smart sensor transmitter.

The IP65 sealed front panel means that water, dust or other such environmental conditions are no obstruction to the use of the 320 - a hazard that may prohibit the use of other instruments.

The versatility of the 320 results in reduced stock holding which, combined with its exceptional accuracy and stability and 12 month warranty, gives the lowest cost of ownership of any of its competitors.

PROGRAMMING

All parameters can be entered from the front panel or via the communications port (optional). Programming is done by pressing combinations of the five keys on the front panel of the instrument. The keys are pressed to progress through a series of menus which are displayed on the display in helpful mnemonics. Lack of activity returns the instrument to the run mode. In the run mode the keys are used individually to examine set-points and clear latched alarms.

SIGNAL RE-TRANSMISSION - 323 & 324

The user programmable isolated analogue output allows the 320 series to be used in applications where a local display as well as data recording is required. This output can be configured to transmit the measured, averaged, maximum or minimum value and has its own damping filter for noisy or fast moving signals. The input can be locally conditioned and retransmitted over a relatively long distance. Being electrically isolated, problems associated with earth loops, which are often encountered in measurement systems, are eliminated.

Alarms - 322 & 324

Any of the four standard software alarms can be used to operate a relay. In addition a special AND function allows a relay to switch only if two or more alarm conditions are active.

- * Universal Input
- * 2 User definable Buttons
- * 4 or 5 digit display
- * IP65 (NEMA4) front panel
- * Isolated re-transmission option
- * 4 software alarms with 'AND' function.
- * 2 output relay option
- * RFI screened
- * Programmable signal linearisation
- * Serial communications

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SPECIFICATIONS

ENVIRONMENTAL

Ambient temperature range: 10-50°C
 Humidity: 0-95% RH non-condensing
 Power Supply: 90 to 265Vac 50/60 Hz
 10 to 32V ac or dc.

VOLTAGE INPUTS

Ranges: ±100mV, ±10V
 Accuracy: 0.05% of reading ± 20µV (Typically 0.02%)
 Resolution: 1µV (100mV range), 100µV (10V range)
 Input Impedance (Ohms): >100M (mV i/p) >1M (V i/p)

CURRENT INPUT

Range: ±20mA
 Accuracy: 0.05% of reading ±4µA (Typically 0.02%)
 Resolution: 2.0µA
 Input Impedance: 5 Ohms Typical
 Maximum Burden: 100mV

REFERENCE JUNCTION COMPENSATION (CJC)

Accuracy: Better than ± 0.5°C after 30 minutes

RESISTANCE/RTD INPUTS

Configuration: 2, 3 or 4 wire programmable.
 Excitation Current: 0.25mA Typical
 Range: 0 to 400 Ohms
 Accuracy: 0.4 Ohms (Typically 0.2 Ohms)
 Resolution: 0.01 Ohms

TRANSMITTER/TRANSDUCER SUPPLIES

All supplies isolated: 500Vdc/peak ac

24V Transmitter supply - All models
 Nominally 24V @ 32mA Maximum

10V Regulated Transducer supply - **321, 322**
 10V ± 0.1V @ 30mA Maximum

0 to 12V Regulated Transducer supply - **323, 324**

Resolution: 0.01V
 Accuracy: ± 0.05V (Typically 0.02V)
 Temperature Drift: <100ppm/°C
 Output Ripple: <5mV
 Output Current: 35mA Maximum

ANALOGUE OUTPUT - 323, 324

Isolation: 500Vdc/peak ac
 Ranges: User Selectable 0-10V, 0-20mA or 4-20mA
 Accuracy: 0.2% of Span (Typically 0.1%)
 Temperature Drift: <100ppm/°C
 Output Ripple: <10mV
 Response: 63% within 32ms, 99% within 100ms
 Resolution: 0.05% of Span(5mV or 0.01mA)
 Maximum Voltage Output: 11V @ 22mA
 Maximum Current Output: 22mA @ 18V
 Maximum Load: 900Ohms
 Programmable Damping Filter

ALARM RELAY OUTPUTS

Relays: 2x Change over contacts - 1A @ 250Vac
 5A @ 30Vdc

THERMOSENSOR BREAK DETECTION

Programmable: Up or Down Scale

DISPLAY

Type: 14.2mm High Brightness LED (Red or Green)
 Range: -1999 to 9999 (**321, 322**)
 -19999 to 99999 (**323, 324**)

SERIAL COMMUNICATIONS

Type: RS422/485 2 or 4 wire multidrop
 Speed: 1200, 2400,4800 or 9600 baud
 Parity: Odd, Even or None
 Stop Bits: 1 or 2
 Protocol: MODBUS and DTPI
 Isolation: 500Vdc/peak ac

A/D CONVERTER

Dual slope integrating with auto zero
 Conversion Rate: 10 per second
 Resolution: 16 bit + sign (1µV)
 Common Mode Rejection: >150dB
 Series Mode Rejection: >70dB (50 or 60Hz)

MECHANICAL

Front Panel: Protection to IP65 (NEMA4)
 Dimensions: 173mm(D) x 48mm (H) x 96mm(W)
 Panel Cutout: 92mm(W) x 44mm(H)
 Depth Behind panel: 466mm including terminals
 Weight: 0.4kg Maximum, Packed weight 0.55kg

ORDERING INFORMATION AND KEY MODEL CODE

KEY MODEL CODE

321 - 1 - R

TABLE 1

TABLE 2

TABLE 3

TABLE 1 - MODEL TYPE

321	Universal Input Digital Indicator - display only
322	Indicator with:- Dual Relay - Rated 1A @ 250Vac Rated 5A @ 30Vdc
323	Indicator with: Analogue Output 0-10V, 0-20mA, 4-20mA
324	Indicator with: Dual Relay - Rated 1A @ 250Vac Rated 5A @ 30Vdc and: Analogue Output 0-10V, 0-20mA, 4-20mA

TABLE 2 - SUPPLY

1	90-265Vac 50 or 60Hz 10VA (40mA @ 240V)
2	10-32V ac or dc

TABLE 3 - DISPLAY COLOUR

R	RED
G	GREEN

Skil Environmental Limited reserve the right to change any of the specification without prior notice.



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