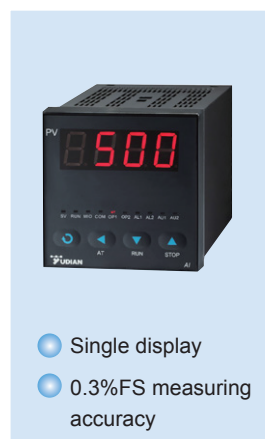# AI SERIES UNIVERSAL INTELLIGENT INDICATOR

PRODUCT INTRODUCTION

AI series universal intelligent indicator is designed for a service life of over 10 years and has 3-year free warranty. Suitable for measuring and displaying temperature, pressure, flow, level, humidity, etc. Widely used in electricity, chemical, metallurgy, food processing and other industries.

FUNCTIONS AND FEATURES

- The input can be freely selected as thermocouple, RTD, voltage, current, Ohm signal and etc.

- Support up to 4 channels alarm relay output including 2 channels high limit alarms and 2 channels low limit alarms.

- With functions of digit calibrating, digital filtering, and thermocouple cold junction auto compensating, which is easy operated.

- Support high accuracy retransmission output with accuracy up to 14-bit D/A and temperature drift less than 100PPm/℃.

- Support RS485 communication interface, widely used for AIDCS, split paperless recorder and touch screen control system.

- Single display
- 0.3%FS measuring accuracy

- Dual display
- 0.3%FS measuring accuracy

- Single display
- 0.2%FS measuring accuracy

- Dual display
- 0.2%FS measuring accuracy

- Dual 5-digit display
- 0.2%FS measuring accuracy

OVERALL DIMENSIONS

D2（48*48mm）

F（96*48mm）

D（72*72mm）

E（48*96mm）

E2（48*96mm）

E5（DIN rail mounted）

A（96*96mm）

A2（96*96mm）

B（160*80mm）

B2（160*80mm）

C（80*160mm）

C3（80*160mm）

MODEL SELECTION AND SPECIFICATIONS

AI–	□	□	□	□	□	□	□	□	Specifications
Model	500								single channel indicator, with single display and measuring accuracy of 0.3%FS
	501								single channel indicator, with dual display and measuring accuracy of 0.3%FS
	700								single channel indicator, with single display and measuring accuracy of 0.2%FS
	701								single channel indicator, with dual display and measuring accuracy of 0.2%FS
	751								single channel indicator, with dual 5-digit display and measuring accuracy of 0.2%FS, support only A and E dimension and MODBUS protocol
Panel size		A							96*96*100mml
		A2							96*96*100mm, with 25 segments and 4 levels of luminosity
		B							160*80*100mm
		B2							160*80*100mm, with 25 segments and 4 levels of luminosity
		C							80*160*100mm
		C3							80*160*100mm, with 50 segments and 2 levels of luminosity
		D							72*72*95mm
		D2							48*48*95mm
		E							48*96*100mm
		E2							48*96*100mm, with 25 segments and 4 levels of luminosity
		E5							48*96*100mm, DIN rail mounted type
		F							96*48*100mm
Multiple input (MIO)			I4						2-wire transmitter or 4-20mA signal input, provide 24VDC to transmitter
			I7						one channel 0~5A AC current input
			I8						one channel 0~500V AC voltage input
			I20						one channel 0~20V DC voltage input
			I50						one channel 0~50V DC voltage input
			I100						one channel 0~100V DC voltage input
			I200						one channel 0~200V DC voltage input
			I500						one channel 0~500V DC voltage input
			I1000						one channel 0~1000V DC voltage input
			V*						V24, V12, V10 is for 24VDC, 12VDC, 10VDC power supply module
Output (OUTP)				X3/X5					linear current 4-20mA output (X5 has own isolated power)
Alarm (ALM)					L0				large volume relay contact output (250VAC/2A) (Chinese brand)
					L2				small volume relay contact output (250VAC/1A) (Omron brand)
					L3				dual channel N/O relay contact output (250VAC/2A) (Chinese brand)
Auxiliary output (AUX)						L0			large volume relay contact output (250VAC/2A) (Chinese brand)
						L2			large volume relay contact output (250VAC/2A) (Chinese brand)
						L3			dual channel N/O relay contact output (250VAC/2A) (Chinese brand)
Communication (COMM)							S/S4		RS485 communication interface (S4 has own isolate power supply)
Panel color								Q	Black
								Z	Grey

ATTENTION:

1. AI-751 supports Modbus RTU protocol and only A and E dimensions are available.

2. AI-500/700 doesn't have light bar.

3. D size doesn't have MIO, and its COMM and ALM share one slot. If indicators installs RS485 module, it doesn't have ALM; If controller requires alarm function it can install alarm module in AUX.

4. D2 size doesn't have MIO and ALM, and its COMM and AUX share one slot. So controller should choose either RS485 or alarm function. If require both RS485 and alarm, users should choose D6 size which supports module SL. D2 size doesn't support 0~5V/ 1~5V linear current input. Users can transform the signal into 0~500mV/ 100~500mA or choose D6 size.

5. About MIO: it supports 4~20mA/ 0~20mA input or signals from 2-wire transmitter when installing I4 module. Yudian instruments support thermocouple and RTD input as standard configuration.

MODEL SELECTION

There are maximum five module slots: multi-function input (MIO), main output (OUPT), alarm (ALAM), auxiliary output (AUX) and communication (COMM). The modules can be purchased together or individual, and can be assembled freely.
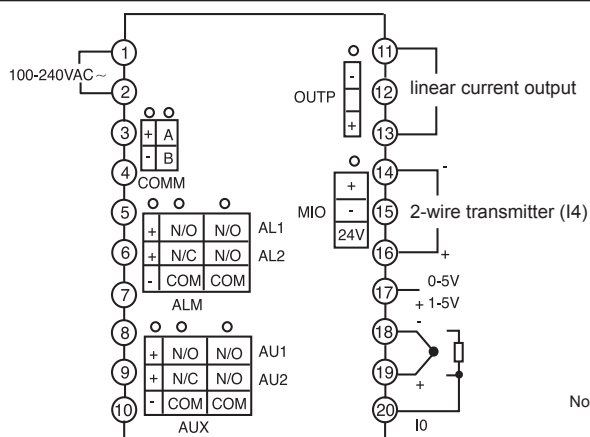
Example 1:

AI-701E5I4X3L3L3S4

AI-701	E	I4	X3	L3	L3	S4
①	②	③	④	⑤	⑤	

① Main model for instrument is AI-701, single channel indicator, with single display and measuring accuracy of 0.2%FS

② Front panel size is E 48*96mm.

③ I4 module in MIO means 4~20mA/ 0~20mA or signals from 2-wire transmitter input.

④ X3 module in OUTP means linear current 4-20mA retransmission output.

⑤ Both ALM and AUX are installed with L3 module which means 4 channels alarm relay output.

⑥ Communication module S4 is in COMM which means instrument supports RS485 communication with isolate power supply.

WIRING DIAGRAM

A.A2.B.B2.C.C3.E.E2.E5.F

Note: For linear voltage input, if the range is below 500mV, connect to terminals 19+ and 18-; 0~5V, 1~5V or 0~10V signal can be inputted from terminals 17+ and 18-. 4~20mA linear current signal can be transformed to 1~5V voltage signal by connecting 250 ohm resistor, and then be inputted from terminals 17+ and 18-; If I4 module is installed in MIO socket, 4~20mA signal can be inputted from terminals 14+ and 15-, and 2-wire transmitter can be inputted from terminals 16+ and 14-.
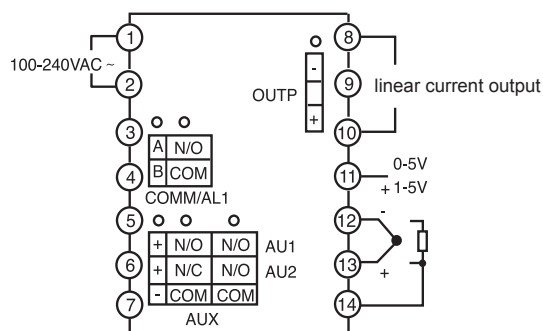
The graph suits for upright instruments with size A, A2, C, C3, E, E2, E5.

Note: For instruments with size B, B2, F, please clockwise rotate the graph 90 degree and the numbers of terminals keep same.

D (72mm × 72mm)

Note: For linear voltage input, if the range is below 500mV, connect to terminals 13+ and 12-. 0~5V, 1~5V or 0~10V signal can be inputted from terminals 11+ and 12-. 4~20mA linear current signal can be transformed to 1~5V voltage signal by connecting 250 ohm resistor, and then be inputted from terminals 11+ and 12-.

D2 (48mm × 48mm)