

# UI Series of Big Digit Process Indicator

User Manual



**ABUS TECHNOLOGIES INC.**

## WARNING

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- ❖ This manual should be passed on to the end user.
- ❖ The contents of this manual are subject to change without prior notice.
- ❖ All rights reserved.
- ❖ ABUS gives no warranty of any kind with regard to this manual, including, but not limited to, fitness for a particular purpose.
- ❖ If any question arises or errors are found, or if any information is missing from this manual, please inform your supplier or inform at [info@abustek.com](mailto:info@abustek.com).
- ❖ The specifications mentioned in this manual are limited to those for the standard type under the specified model number break-down and do not necessarily apply for customized instruments.
- ❖ Please note that changes in the specifications, construction, or component parts of the instrument may not immediately be reflected in this manual at the time of change.
- ❖ If the customer or any third party is harmed by the use of this product, ABUS assumes no responsibility for any such harm owing to any defects in the product which were not predictable, or for any indirect damages.

Although Warning hazards are related to personal injury, and Caution hazards are associated with equipment or property damage, it must be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process system performance leading to personal injury or death. Therefore, comply fully with all Warning and Caution notices.

Information in this manual is intended only to assist our customers in the efficient operation of our equipment. Use of this manual for any other purpose is specifically prohibited and its contents are not to be reproduced in full or part without prior approval of Technical Communications Department, ABUS Technologies

## HEALTH AND SAFETY

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To ensure that our products are safe and without risk to health, the following points must be noted:

1. The relevant sections of these instructions must be read carefully before proceeding.
2. Warning labels on containers and packages must be observed.
3. Installation, operation, maintenance and servicing must only be carried out by suitably trained personnel and in accordance with the information given. Any deviation from these instructions will transfer the complete liability to the user.
4. Normal safety precautions must be taken to avoid the possibility of an accident occurring when operating in conditions of high pressure and/or temperature.
5. Chemicals must be stored away from heat, protected from temperature extremes and powders kept dry. Normal safe handling procedures must be used.
6. When disposing of chemicals ensure that no two chemicals are mixed.

Safety advice concerning the use of the equipment described in this manual or any relevant hazard data sheets (where applicable) may be obtained from the Company address on the back cover, together with servicing and spares information.

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## 1. INTRODUCTION

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UI series of universal process indicator is a high performance indicator that can be used to monitor wide range of input signal. The various input signals could easily be selected from the front keypad without any change in Hardware. The Standard model comes with 2-alarms, 24V auxiliary power supply for transmitter and analogue retransmission 4 ~ 20 mA DC output. The unit features double display for indication of process value and programming data. The large and bright PV display, robustness of product makes the product suitable for industrial applications. The retransmission output could be taken to PLC, recorder and other applications, for other functions. RS-485 or RS-232 communication is also optionally available.

### Applications

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The instrument can measure and display any range of Current, Voltage and temperature through RTD-Pt 100 signal input. The user can select data hold or high PV hold. The instrument can be used with 2-wire Differential Pressure Transmitter, Pressure Transmitter, Temperature Transmitter, Temperature Sensor or any other industrial process parameters (for non-linear input). RS485 communication is also optionally available. The input, output and the power supply are isolated.

## 2. PRESENTATION

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### 2.1 Features

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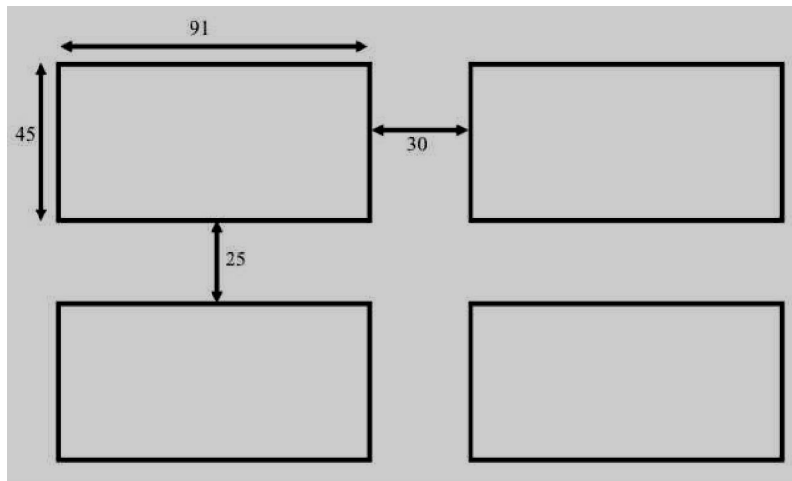
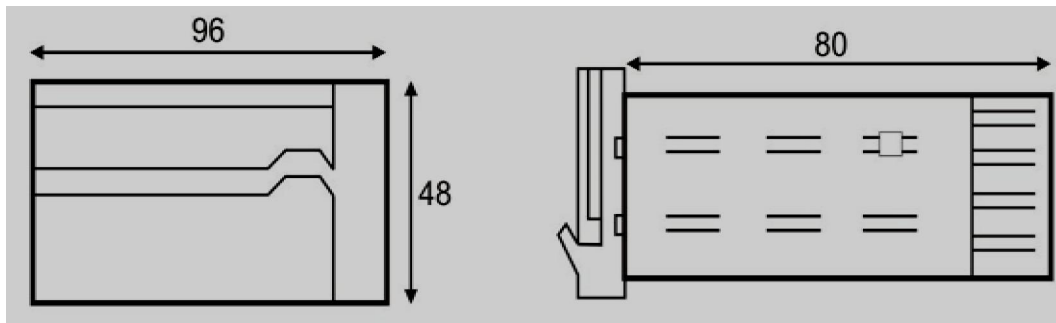
1. Input mA, V, Pt100(T/C Optional) selected by software via Front Panel.
2. Measuring range / Zero point can be adjusted.
3. Up to 3 relay alarm available. Capacity: AC 250V/3A or 30V/3A
4. With isolated RETRANSMISSION analogue output 0-10mA, 4-20mA or 0-10V.
5. Decimal point shift is programmable.
6. Retransmission output can be scaled between USP and LSP.
7. Auxiliary Power Supply/ Transmitter Power Supply: 24V/12V, max.DC30mA.
8. With RS232 or RS485 communication, MODBUS RTU Protocol.
9. Accuracy:  $\pm 0.25\%$  FS(Optional).

### 2.2 Technical Parameters

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<b>Power Supply:</b>	90-260V AC or 18-30V AC/DC
<b>Consumption:</b>	$\leq 5\text{VA}$
<b>Accuracy:</b>	0.25 % F.S. $\pm 1$ Digit
<b>Sampling Rate:</b>	$\leq 8$ times/second
<b>Retransmission Output:</b>	4~20 mA or 0~10 V
<b>Alarm:</b>	Up to 3 Relay alarms Capacity AC 250V/3A or DC 30 V/3A
<b>Input:</b>	Refer to the Input Signal Table 6.1
<b>Auxiliary Power:</b>	DC 12/24/30 mA
<b>Communication:</b>	Rs232 or Rs485, MODBUS RTU Protocol Optional

### 3. DIMENSIONS



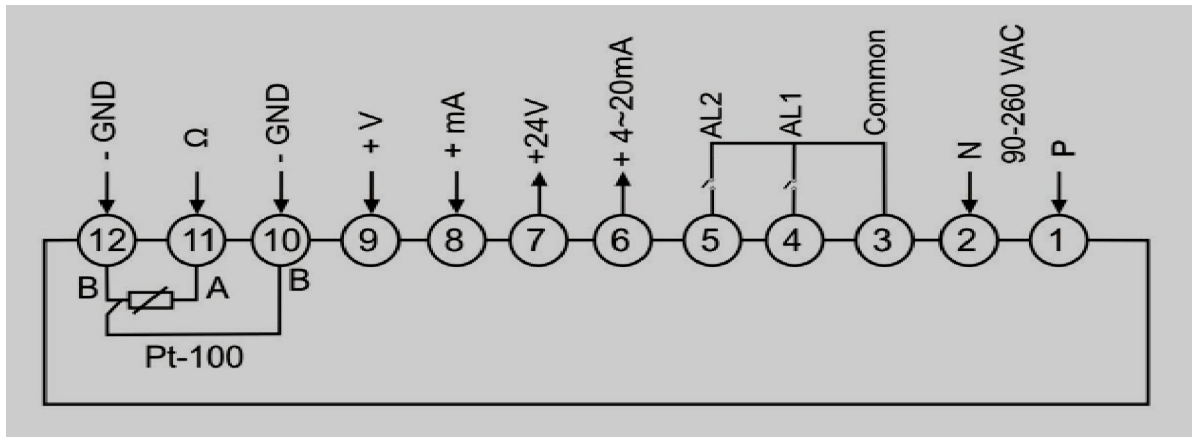
All Dimensions in mm

### 4. ORDERING DETAILS

		TYPE		DESCRIPTION
Product	UI			UI Series of Process Indicator
Power Supply		D		AC 90~260 V 50/60 Hz (Default)
		E		DC 24 V
Analogue		N		DC 0~10 mA
		V		0~10 V
		D		DC 4~20 mA (Default)
AL1		R		Relay
		S		SSR / LOGIC
		T		SCR
		N		No Alarm
AL2		R		Relay
		S		SSR / LOGIC
		T		SCR
		N		No Alarm
Communication			N	No Communication
			2	RS-232
			4	RS-485
Auxiliary Power Supply			A	DC +12 V / 30 mA
			B	DC +24 V / 30mA
Panel Size			96	Optional 96 x 96 cutout.
			48	Standard 48 x 96 cutout.

Example: UI > D > D > R > R > N > B > 48

## 5. CONNECTIONS



Note: For Changes refer to the label on the product

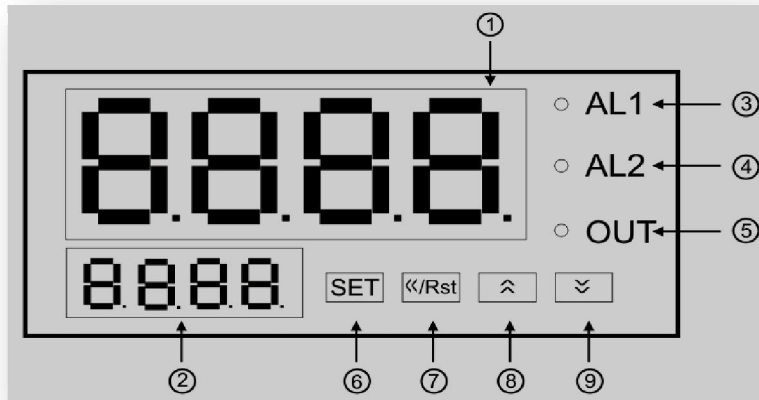
## 6. INSTALLATION

### 6.1 Input Signal

INPUT SIGNAL	MEASURING RANGE	INPUT IMPEDANCE	DEFAULT SETTING	STANDARD
mA	0~1 mA 0~10 mA, 4~20mA	≤ 150 Ω	4~20mA	✓
V(AV/DV)	0~5V, 0~10V, 0~500V	≤ 200 K Ω	DC 0~10V	✓
Pt	-200~650°C	≤ 0.2 mA	Pt100	✓
mV	0~10 mV, ±100mV	≤ 2 M Ω	0~75mV	✗
Rt	0~400 Ω, 0~10K	≤ 0.2 mA	0~400 Ω	✗
	Cu50 Cu100 -50~150°C			
Pr	20 Non-linear Input			✗

1. The factory setting of the input is 4-20mA, 0-10V and Pt. In case of requirement of any other input signal such as 0-4000hm, Pt100, please contact the manufacturer or your local ABUS distributors.
2. High Voltage/Current input function needs special order.
3. Analogue output can also be used as AI3, but you can select only one of them, but not both.
4. Non-Linear input needs special order.

## 6.2 Panel

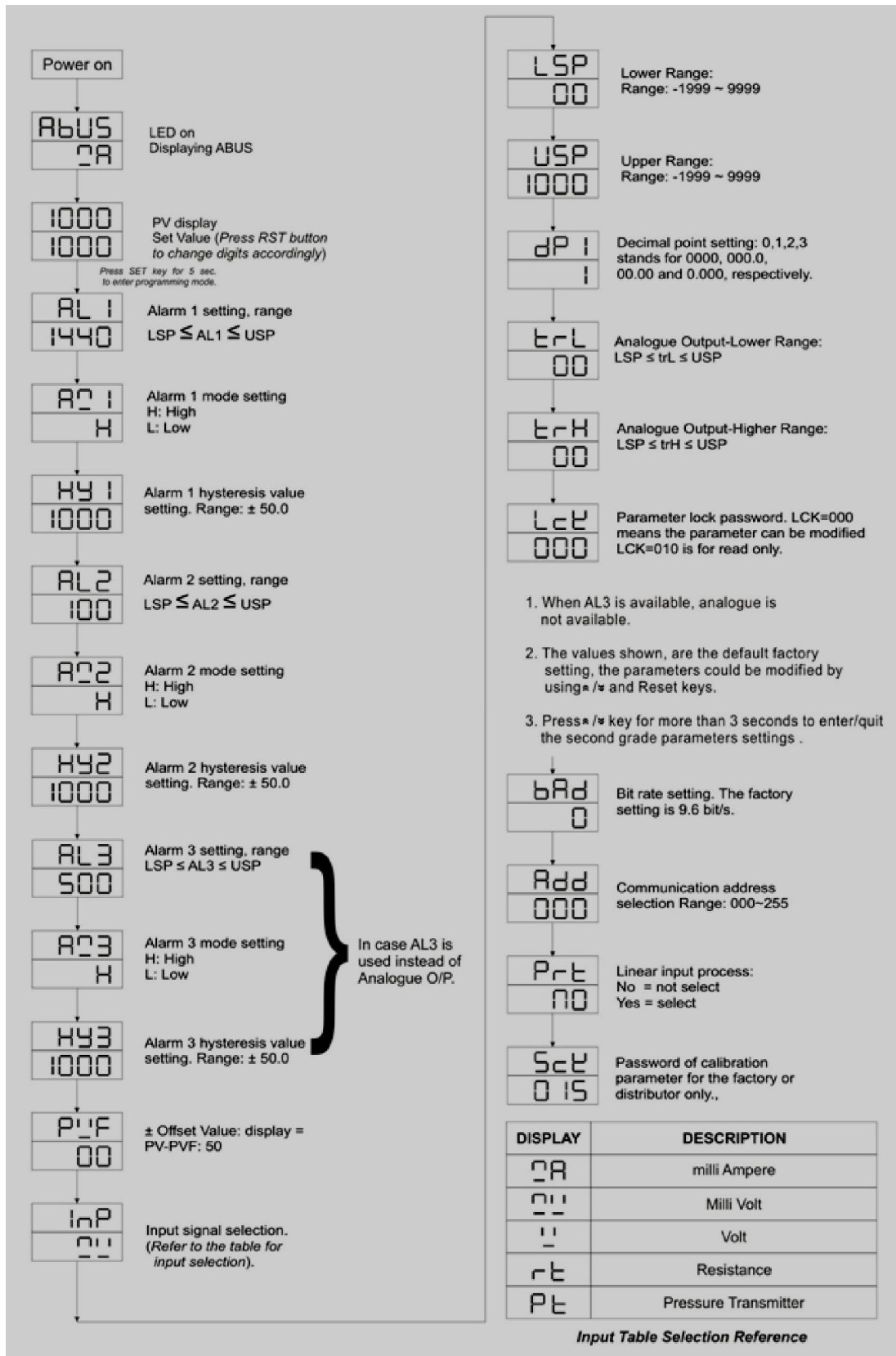


### Panel Attributes

S.No.	Parameters	Description
1	LED	Measured value (PV).
2	LED	Programming Display (SV).
3	AL1	Indication lamps for Alarm 1- <i>On: Output Off: No Alarm</i>
4	AL2	Indication lamps for Alarm 2- <i>On: Output Off: No Alarm</i>
5	OUT	Select / Confirm key / Analogue Output.
6	SET	Set Key (Press SET key for 5 seconds to enter programming mode).
7	«/Rst	Shift / Clear / Reset key
8	⤴	Up Key
9	⤵	Down Key

# 7. CONFIGURATION

## 7.1 Configuration Process





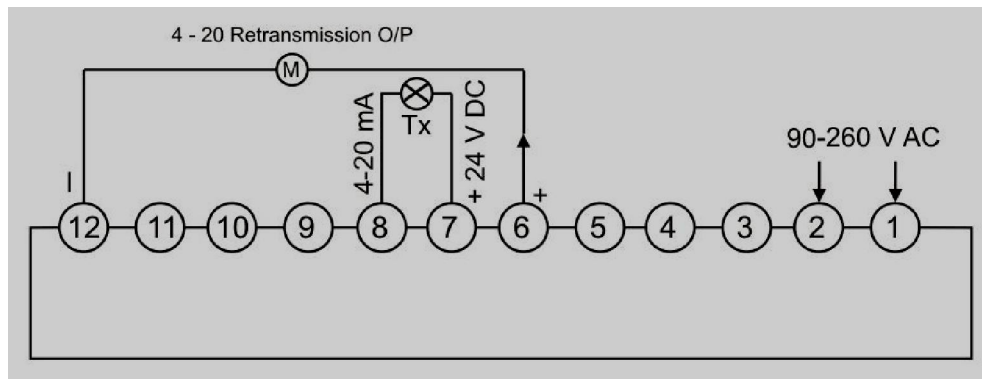
## 7.2 Key Operation Instructions

1. Alarm setting: In the powered state press and hold SET key for more than 3 seconds, enter alarm mode parameters setting menu. Press
2. <</RST Key, LEDflashes, press <</RST key to modify, and them press SET key to confirm. Press SET key to read the following parameters one by one.
3. Rate setting: In powered state, press <</RST key and LED flashes, then you can modify the value by Up and Down key. The factory setting is 1.00. Once the user want to set it to be other value. then  $PV = Rate \times (USP - LSP) + LSP$ . USP means Up limit, LSP means Down limits.
4. Zero point clear: In the displaying estate. without key operation, when the input zero point, press and hold <</RST key for more than 2 seconds. It is for the sensor zero point clear.
5. The instrument will return to the measuring estate without any operation for 25 seconds.

## 8. OPERATION

### Example for Usage

Used with 2 wire transmitter. The instrument can supply DC 24V auxiliary power and isolate analogue output 4~20mA. Select input signal mA.



## 9. MAINTENANCE

### Troubleshooting

S. No.	SPECIFICATIONS	ELIMINATE
1	No display	Check all the connections and wiring to ensure them being correct. Thoroughly check connections to power supply terminals and signal input terminals.
2	Wrong display	Check if the PVF= 0.00 Check if the input signal is conformity with the selected symbol.
3	Wrong control	In case instrument loses the control, check for the output diagram connection is correct or check if the components for output part are damaged.
4	UUUU, LLLL	When the instrument displays "UUUU", it means the input signal exceeds the measured USP range. When the instrument displays "LLLL", it means the input signal exceeds the measured USP range. When the instrument displays "LLLL", it means the input signal lower measured LSP range, or input signal terminal connection is contrary.

## 10. SAFETY PRECAUTIONS

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1. The unit should be powered for 15 minutes before use.
2. Use in ambient temperature of 0-60°C.
3. Avoid vibrations, shock, excessive dust, corrosive chemical materials or gaseous environment.
4. Input wire should not be too long. If measured signal have to be far away from the unit, please use 2-core shielded cable.
5. Use this instrument in the scope of its specifications, otherwise fire or malfunctions may result.
6. Contact of the instrument, with organic solvents or oils should be avoided.
7. Do not turn on the power supply until all of the wiring is completed. Otherwise electrical shock, fire or malfunction may result.
8. Do not disassemble, repair or modify the instrument.
9. All connections should be tightened properly.
10. Power supply should be constant, should not be fluctuating.

## 11. WARRANTY

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ABUS provides the original purchaser of this instrument a one (1) year warranty against defects in material and workmanship under the following terms:

- The one year warranty begins on the day of shipment as stated on the sales bill.
- During the warranty period all costs of material and labor will be free of charge provided that the instrument does not show any evidence of misuse.
- For maintenance, return the instrument with a copy of the sales bill to our factory.
- All transportation and insurance costs should be covered by the owner of the equipment.
- Should any sign of electrical or mechanical shock, abuse, bad handling or misuse be evident the warranty voids and maintenance costs will be charged.