



5002U-P

Digital Process Controller

Advanced. Precise. Compact



Masibus 5002U-P is much more than a controller capable for complex and demanding process control applications. It has accessibility of both hardware and software features in compact size making it a highly configurable product, offering many features found in costly programmable controllers.

5002U-P accepts all analog process inputs like thermocouple, RTD, current and voltage.

5002U-P offers field configurable control outputs comprising of ON-OFF or proportional. It has total 4 relay o/p providing a combination of alarm/control output based on application requirement. A comprehensive controlling can be implemented using four relays with any of required control algorithm like on-off or proportional control.

Using RS-485 interface desired parameters configuration and status can be communicated to SCADA/PLC/DCS applications. Using analog retransmission output important process values can be retransmitted as any standard current or voltage signal.

It has fail-safe design protecting the process in case of system malfunctioning

Features

- Universal input selection
- Premium on/off or proportional controller
- Transmitter power supply
- Fast loop response time of 250msec.
- Up to 4 independent programmable relay output
- 22 Alarm types
- High accuracy of 0.1% FS
- Retransmission output (Optional)
- RS-485 port with modbus RTU protocol (Optional)
- Input scalability for linear input type
- Output scalability for all input type
- Square root extraction for linear input type
- Settable digital filter 0-60 Sec.
- Password protected menu to avoid unauthorized access
- Unique one shot calibration method

Applications

- Heat treatment furnaces
- Reheat furnaces
- Ceramic kilns
- Glass industry
- Flow/ pressure control
- Distillation and reactor control in chemical plants
- Water and waste water control

TECHNICAL SPECIFICATIONS

Input		Transmitter Power Supply	24V DC (±1V) @30 mA	
Input 1: PV Input		Power Supply		
Input Type	Thermocouple (E, J, K, T, B, R, S, N,C,G) RTD (Pt 100), current, voltage	Standard	85-265V AC/110-300V DC	
Input Range	Refer table-1	Optional	18-36V DC	
Accuracy	TC (E,J,K,T,C,J,N,C,G), RTD: ± 0.1% of F.S ± 1 °C TC (B,R,S): ± 0.2% of F.S ± 1 °C Current, voltage: ± 0.1% of F.S ± 1 count	Power Consumption	<12 VA	
ADC Resolution	17 bits	Isolation (Withstanding voltage) Bet* primary terminals* and secondary terminals**: At least 1500V AC for 1 minute Bet* primary terminals* and grounding terminal: At least 1500 V AC for 1 minute Bet* grounding terminal and secondary terminals**: At least 1500 V AC for 1 minute Bet* secondary terminals**: At least 500 V AC for 1 minute * Primary terminals indicate power terminals and relay output terminals. ** Secondary terminals indicate analog I/O signal and communication O/P. Insulation resistance: 50MΩ or more at 500 V DC between power terminals and grounding terminal		
Display Resolution	0.1°C / 1 count	Physical		
Sampling Rate	250 msec.	Dimension (in mm)	96(H) x 96(W) x 110(D)	
CJC Error	±2.0 °C max.	Panel Cut Out (in mm)	92.5(H) x 92.5(W)	
Sensor Burnout Current	0.25uA	Weight (gms)	500 (Approx.)	
RTD Excitation Current	1mA max.	Enclosure Material	Molded ABS	
NMRR	> 40dB	Enclosure Protection	IP20	
CMRR	> 120dB	Terminal Cable Size	2.5mm²	
Temp-co	< 100ppm/°C	Accessories	Two mounting clamps, 100 Ohms Ext. Resistor	
Input Impedance	> 1MΩ	Environmental		
Max Voltage	20VDC	Operating temperature	0 to 55 °C	
Display & Keys		Storage temperature	0 to 80 °C	
Process Value	0.56" Four-digit 7 segment red LED	Humidity	20 to 95% RH Non-condensing	
Set Value	0.4" Four-digit 7 segment green LED	Table 1: Display Range		
Status Indication	Four Red LED's for relays, alarm, set point selection, green LEDs for communication	Input Type		
Keys	Menu, escape, shift, increment, ACK	Ranges		
Output		Thermocouples	E	-200 to 1000 °C
Control Output (Field Programmable)			J	-200 to 1200 °C
Output Type	ON/OFF or proportional		K	-200 to 1370 °C
Proportional Band	0.1 to 999.9		T	-200 to 400 °C
CycleTime	1 to 250sec.		B	450 to 1800 °C
MR (Manual Reset)	-50% to 50%		R	0 to 1750 °C
Hysteresis	1 to 250 (on/off mode)		S	0 to 1750 °C
Relay/Alarm Output		N	-200 to 1300 °C	
Relays	4 (Configurable for control/alarm)	C	0 to 2310 °C	
Type & Rating	1 Change over (C, NO, NC), 5A @ 230V AC / 30V DC	G	0 to 2310 °C	
Mode	Proportional* or ON/OFF control (Field selectable)	RTD	Pt-100	-199.9 to 850.0 °C
Note: *proportional control settable for relay No.1 only.		Linear	-10 to 20mV	-1999 to 9999
Retransmission Output (Optional)			0 to 75mV	
Number of Output	1		0 to 100mV	
Output Signal	0/4-20mA @ 500 ohm max. 0/ 1-5VDC, 0-10 V DC @ 3 K ohms min.		0.4 to 2V, 0 to 2V	
Output Accuracy	±0.25% of span		4 to 20mA, 0 to 20mA (Ext.100 Ω)	
Communication Output (Optional)			0 to 5 V	
Interface	RS-485 (2 Wire)		1 to 5 V	
Protocol	Modbus-RTU	0 to 10 V		
Baud Rate (bps)	9600, 19200			

Ordering Code								
Model	Inputs		Power Supply		Retransmission O/P		Communication o/p	
5002U-P	X	X	85-265VAC / 125-300 VDC		X	X	X	
	1	E	U1	85-265VAC / 125-300 VDC	N	None	N	None
	2	J	U2	18-36VDC	1	4-20 mA	Y	RS 485
	3	K			2	0-20 mA		
	4	T			3	1-5V		
	5	B			4	0-5V		
	6	R			5	0-10V		
	7	S						
	8	N						
	P	C						
	Q	G						
	9	Pt-100						
	A	-10 to 20 mV						
	B	0 to 75mV						
	C	0 to 100 mV						
	D	0.4 to 2V						
	E	0 to 2V						
	F	0 to 5V						
	G	1 to 5V						
	H	0 to 10 V						
	S	Special*						

+: Consult Factory