masibus

5040

Single Loop Controller

Features

- Universal Input, 17 Input types
- Universal output including Valve positioner (with and without feedback) output
- Universal Power Supply
- Fast Loop response time of 250 mSec
- Digital filter with brightness control
- 4 Relay and 4 Digital outputs freely configurable for Control, Alarm and events
- 18 Alarm types
- Levels of configuration and password protection
- All Configuration and Calibration from front panel keypad
- Auto tune PID with cascade and Ratio control
- Auto/Manual selection with bump less transfer
- 4 Digital Inputs for remote operation
- 2 Isolated Analog outputs for control /Re-Transmission
- Isolated communication port with Modbus RTU protocol
- Draw-out design for ease of maintenance and replacement

Benefits

- One controller for all input and output types
- Suitable for wide range of AC/DC Aux supply
- Fast Loop Response suits all process control applications including flow
- Freely configurable I/Os meets most demanding applications
- User friendly menu to configure and calibrate
- All configuration, status and calibration parameters available on Modbus
- Re-Transmission and Communication feature for Interface with DAS/SCADA/PLC
- Most compact, comprehensive and cost effective

Application

- Heat treatment furnaces
- Reheat furnaces
- Ceramic Kilns
- Glass Industry
- Flow control
- Pressure control
- Distillation and Reactor control in Chemical plants
- Water and waste water control applications

Technical Specifications:

Input:

PV : 1

Type	Range
E	-200 to 1000 °C
J	-200 to 1200 °C
K	-200 to 1370 °C
T	-200 to 400 °C
B	450 to 1800 °C
R	0 to 1750 °C
S	0 to 1750 °C
N	-200 to 1300 °C
Pt-100	-200 to 850 °C
-10 to 20 mV	-1999 to 9999
0 to 75 mV	
0 to 100 mV	
0.4 to 2 V 4 to 20mA(Ext.100Ω)	
0 to 2 V 0 to 20 mA(Ext.100Ω)	
0 to 5V	
1 to 5 V	
0 to 10 V	

ADC Resolution : 17 bits
Display Resolution : 0.1 / 1.0 °C
Sampling rate : 4 samples/sec

Accuracy

E,J,K,T,N : 0.1% of FS (Rdg ≥ 0 °C) 0.25% of FS(Rdg< 0 °C)
B,R,S : 0.25% of FS
Pt-100, mV, V : 0.1% of FS
CJC error : ± 2.0 °C Max
Sensor open : All inputs except 0-5/10 V
T/C Burnout current : 0.25uA
RTD excitation current : 1.0 mA max
NMRR : > 40dB
CMRR : > 120dB
Tempco : < 100 ppm
Input Impedance : > 1MΩ
Max Voltage : 20V dc

SV

Type	Range
0 to 5 V 0 to 20mA(Ext.250Ω)	-1999 to 9999
1 to 5 V 4 to 20mA(Ext.250Ω)	

ADC Resolution : 17 bits
Sampling rate : 3 X PV sampling rate
Accuracy : 0.1% of FS
Input Impedance : > 1MΩ
ZV : Potentiometer 100Ω to 2KΩ
Protection : Wire Break detection of any wire
Resolution : 0.1%
Digital Input : 4, Potential free or open collector
Rating : 24V DC@5mA max

Outputs

Loop power supply 24V DC ± 1V@ 26mA (current limited)

Control output (Field programmable)

Relay : No. of Relays : 2
Type : 1 change over contacts
: Rating : 2A@ 230VAC/30 VDC

Pulse : Rating : 11V DC@20mA
: Resolution : 10ms

Linear : 4-20mA@500Ω max
: Accuracy : 0.25% of FS

Alarm outputs

Relay : 2 or 4(If control output is linear/pulse)
Type : 1 change over contacts
Rating : 2A@ 230VAC/30 VDC
Open collector : 4
Rating : 24V DC@50mA

Re-Transmission output : **1 (Field programmable)**
Selectable for PV, MV or ZV
Current : 0/4-20mA @500Ω Max
or Voltage : 0/1-5V, 0-10V @10KΩ Min
Accuracy(DAC) : 0.25% FS
Isolation : With Primary terminals :1500VAC/1 Min
With Secondary terminals: 600VAC/1 Min

Communication

Type : Rs485
Protocol : Modbus RTU
Baud Rate : 9600/19.2k.
Isolation : With Primary terminals :1500VAC/1 Min
With Secondary terminals: 600VAC/1 Min

Control Mode : On/Off, P, PI, PID
Manual offset in P mode : ±50% of P band
P band : 0.1 to 999.9
Integral : 0(off) to 1000 secs
Derivative : 0(off) to 250 secs
Cycle time : 1 to 250 secs (Hys in on/off mode)
Auto tuning : Yes

Display : PV : 0.56" Red 4 digit
: SV : 0.4" Green 4 digit
: MV/ZV : 20 segment orange Bar
: Status : Discrete LEDs

Keys : 5 for configuration, calibration & operation

Power supply

Standard : 85-260VAC @ 50Hz
Optional : 18-36VDC
Consumption : 15VA Max

Environmental

Operating temperature : 0-55 °C
Storage temperature : 0-80 °C
Humidity : 30-95 %RH non-condensing
Insulation Resistance : > 50MΩ @500VDC
Dielectric : 1500VAC@50Hz for 1 minute
Protection : IP20

Physical

Enclosure : Molded ABS
Weight : 500 grams approx
Color : Black
Front Bezel : 96 x 96 mm
Panel Cutout : 92.5mm x 92.5mm
Depth behind panel : 110 mm
Accessories : 2 numbers mounting clamps

ORDERING CODE

Model	Inputs		APS		Control O/P		RX O/P	
5040	1	E	U1	85-260VAC	1	Relay	1	4-20mA
	2	J	U2	18-36VDC	2	Pulse	2	0-20mA
	3	K			3	Linear	3	1-5V
	4	T			4	F/R	4	0-5V
	5	B					5	0-10V
	6	R						
	7	S						
	8	N						
	9	Pt-100						
	A	-10-20mV						
	B	0-75mV						
	C	0-100mV						
	D	0.4-2V						
	E	0-2V						
	F	0-5V						
	G	1-5V						
	H	0-10V						

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