



On-off Controllers

LC5296 Dual Display On-off Controller

5006RN Single Display On-off Controller

LC5296H Compact On-off Controller

Accurate, reliable control of various process applications is provided by Masibus series of On-off controllers with enhanced hardware capabilities in compact enclosure. It has bright seven-segment 0.56" and 0.8" LED display for process value and 0.4" LED display for set value as well as status LEDs for set point indication.

It accepts universal input and provides two relay outputs to perform various control and alarm functions. Intuitive configurations with four front tactile keys ensure easy programming.

Process value can also be retransmitted to remote devices as standard current/voltage signals. Data acquisition can be done on SCADA/PLC applications through RS485 for further process automation.

Designed using proven micro-controller technology, these controllers have been validated to perform accurate and reliable performance in harsh field environments.

Features

- Universal input (TC, RTD, Volts, mA)
- Accuracy 0.1% of F.S.
- Retransmission with accuracy: 0.25% of F.S.
- Fail-safe Design protecting the process in case of system malfunctioning
- RS485 Modbus Communication
- Bright Red seven segment
- Status Indication LEDs
- Display brightness control
- Transmitter Power Supply

Applications

- Heat treatment furnaces
- Water heating boilers
- Chillers
- Oven control

Technical Specifications:

Input

Input Type	Thermocouple (J, K, T, R, S), RTD (Pt100), Current, Voltage
Display Range	Refer Table-1
Accuracy	0.25% of FS \pm (0/1-5V:0.1% of FS)
ADC Resolution	16 bits
Display Resolution	0.1 / 1.0 °C
Sampling Rate	5 Samples/Sec
CJC Error	\pm 2.0 °C
Sensor open	All inputs except 0-5V
Sensor Burnout current	0.25uA
RTD excitation current	0.166mA (Approx)
NMRR	> 40dB
CMRR	> 120dB
Temp-co	< 150ppm/°C
Input Impedance	> 1M Ω
Max Voltage	20VDC

Display & Keys

	LC5296	5006RN	LC5296H
Process Value	0.56" Red 4 digit	0.56" Red 4 digit	0.56" or 0.8" Red 4 digit
Set Value	0.4" Green 4 digit	-	-
Relay & Communication	Discrete LEDs		
Keys	SET1, SET2, Increase, Decrease		

Output

Control Output

Relays	2 Nos.
Type	Single Change over (C, NO, NC)
Rating	2A @ 230VAC / 30VDC
Control Mode	Heat or Cool with time delay

Retransmission Output

Current	0/4-20mA @500 Ω Max.
Voltage	0/1-5V, 0-10V @2K Ω Min.
Accuracy	0.25% of FS

Transmitter Supply 24VDC (\pm 10%) @30mA (Current limited)

Communication Output

Interface	RS485
Protocol	Modbus-RTU
Baud Rate	9600, 19200, 38400

Power Supply

Standard	85-265VAC/ 125-300VDC
Optional	18-36VDC

Isolation (Withstanding voltage)

- Between primary terminals* and secondary terminals**:
At least 1500 V AC for 1 minute
- Between primary terminals* and grounding terminal:
At least 1500 V AC for 1 minute
- Between grounding terminal and secondary terminals**:
At least 1500 V AC for 1 minute
- Between 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: 20M Ω or more at 500 VDC between power terminals and grounding terminal

Physical

Dimensions:

	LC5296/5006RN	LC5296H
Size	96(W) x 96(H) x 75(D)mm	96(W) x 48(H) x 85(D)mm (0.56" Display) 96(W)x 48(H)x 130(D)mm (0.8" Display)
Front Bezel	96 x 96 mm	96(W) x 48(H) mm
Panel Cutout	92 x 92mm	92(W) x 45(H) mm
Depth behind panel	65 mm	75 mm (0.56" Display) 120 mm (0.8" Display)

Weight	300g approx.
Enclosure Material	Molded ABS
Enclosure Protection	IP20
Terminal Cable Size	2.5mm ²

Environmental

Operating temperature	0-55 °C
Storage temperature	0-80 °C
Humidity	20-95 %RH non-condensing

Table-1: Display Range

Input Type	Range
J	-200 to 1200 °C
K	-200 to 1372 °C
T	-200 to 400 °C
R	0 to 1768 °C
S	0 to 1768 °C
Pt100	-200 to 850 °C, -199.0 to 850.0 °C
0/1-5V 0/4-20mA (Ext.250 Ω)	-1999 to 9999

Ordering Code

Model	Input		Auxiliary Power Supply		Options				Display (Only in LC5296H)	
					Output-1		Output-2			
LC5296	1	J	U1	80-265VAC / 125-300VDC	N	None	N	None	5	0.56"
5006RN	2	K	U2	18-36VDC	1	4-20mA	1	4-20mA	8	0.8"
LC5296H	3	T			2	0-20mA	2	0-20mA		
	4	R			3	1-5V	3	1-5V		
	5	S			4	0-5V	4	0-5V		
	6	Pt-100			5	0-10V	5	0-10V		
	C	4-20mA			6			RS485		
	D	0-20mA								
	E	1-5V								
	F	0-5V								

Accessories: Two numbers mounting clamps

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All specifications are subject to change without notice due to continuous improvements.
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