Quick User Guide

masibus LC5296-XP-DC

Flame Proof Controller

SPECIFICATIONS

Input-1	Input-2	Range
PT100(0.1°C)	**PT100(0.1°C)**	-199.9 to 850.0°C
PT100 (1°C)	**PT100 (1°C)**	-200 to 850°C
***4-20mA / 1-5VDC**	***4-20mA / 1-5VDC**	-1999 to 9999 (Field Scalable)
***0-20mA / 0-5VDC**	***0-20mA / 0-5VDC**	
0-10VDC	**-**	

*Use external 250ohms, 0.1% for current Input

Table 1.1

Inputs

Accuracy	
RTD input	± 0.25% of Full Span+1degree
Linear input	± 0.1% of Full Span +1count
Resolution	ADC:16bits,Display:0.1°C/1Count
Sampling Rate	2 Samples/Sec
Sensor open	All inputs except 0-5V,0-10V
Sensor Burnout current	0.25uA
RTD excitation current	0.166mA (Approx.)
Allowable wiring resistance for RTD	Maximum 15 ohms/wire (Conductor resistance between three wires should be equal)
NMRR	> 40 dB
CMRR	> 120 dB
Input Impedance	> 1MΩ(Voltage Input), 250Ω(Current Input)
Max Voltage	20VDC

Display & Keys

PV-1, PV-2	4-Digit, 7-Segment, 0.56" High, Red
Status LEDs	Relay & Communication
Keys	Enter, Escape, Decrease, Increase

Output Types

Relay Output

Relays	2
Type	Single Change over (C, NO, NC)
Rating	5A @ 230VAC / 30VDC
Mapping	With respect to Input no.

Retransmission Output (optional)

Number of output	1 / 2
Mapping	With respect to Input no.
Output Signal	4-20mA / 0-20mA / 0-5V DC/ 1-5VDC / 0-10VDC

Load resistance	
For Current o/p	< 500Ω.
For Voltage o/p	> 3KΩ.
Output accuracy	±0.25% of span

Communication Output (optional in lieu of 2nd Retransmission o/p)

Interface	RS485 (2 Wire)
Protocol	Modbus-RTU
Baud rate	9600, 19200, 38400 bps

Loop Power Supply

LPS	24VDC (±10%) @60mA

Physical

Dimension (H x W x D) mm	
IIA & IIB	150 x 150 x 120
IIA , IIB & IIC	180 x 165 x 140
Weight (Approx.)	
IIA & IIB	2.6kg
IIA , IIB & IIC	3.1kg
Enclosure Material	Flameproof (Explosion Proof) Ex-d
Enclosure Protection	IP 66
Gas Groups	IIA, IIB, IIC (optional)
Area Classification	Zone 1 & 2

Environmental Conditions

TEMPCO	
Input to PV Display	< 100ppm/°C
Display to RX	< 100ppm/°C
Humidity	30% to 95% RH (Non-Condensing)
Instrument Warm-up Time	Approx. 15 min.
Ambient temperature	0 to 55°C
Storage Temperature	0 to 80°C

Power Supply

Standard	85-265VAC/ 100-300VDC
Optional	18-36VDC
Power consumption	<10 VA

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**:

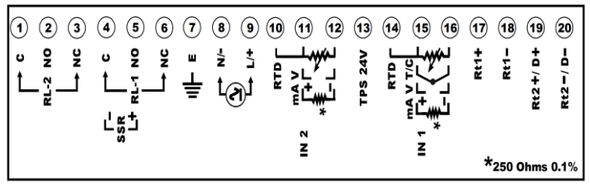
At least 500 V AC for 1 minute

* Primary terminals indicate power terminals and relay output terminals.

** Secondary terminals indicate analog I/O signal and Communication O/P.

Insulation resistance: 20MΩ or more at 500 V DC between power terminals and grounding terminal.

TERMINAL CONNECTIONS



FRONT PANEL DESCRIPTION

Name of Part	Symbol	Function
Increment Key		• Increment the Value of any Parameter.
Decrement Key		• Decrement the value of any parameter
SET Key (Menu / Enter Key)		• Shows different Set Point, if pressed in RUN mode. • In Sub Menu it can be used to get to the next Parameter. • It is also used to save the parameters to nonvolatile memory, when user setting a proper data by Increment and decrement key for parameter configuration.
Escape Key	ESC	• Get to the Previous Menu level.
PV1 (Process Value) Display	PV1	• 4 digital 0.56 inch RED Display • Display process value for Input 1 • Display parameter name when user set parameter. • Display error message when an error occurs
PV2 (Process Value) Display	PV2	• 4 digital 0.56 inch RED Display • Display process value for Input 2 • Display parameter value of parameter in process value field when user set parameter.
Relay-1 Indication	RL1	• ON when Relay-1 is energized & OFF otherwise.
Relay-2 Indication	RL2	• ON when Relay-2 is energized & OFF otherwise.
TX Indication	TX	• ON when device is transmitting some Data (RS-485).
RX Indication	RX	• ON when device is receiving some Data (RS-485).

SAFETY/WARNING PRECAUSTIONS

To ensure that the device can be operated safely and all functions can be used, please read these instructions carefully.

Installation and Start-up must be carried out by qualified personnel only. The relevant county-specific regulations must also be observed.

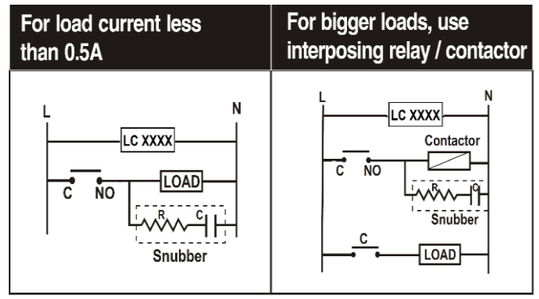
Before start-up it is particularly important to ensure:

- Terminal wiring: check that all cables are correctly connected according to the connection diagram
- All wiring must confirm to appropriate standards of good practice and local codes and regulations. Wiring must be suitable for voltage, current and temperature rating of the system.
- Unused control terminals should not be used as jumper points as they may be internally connected, which may cause damage to the unit.

LOAD CONNECTION

Electrical precautions during use

Electrical noise generated by switching of inductive loads can create momentary disruption, erratic display, latch up, data loss or permanent damage to the instrument. Use of snubber circuits across loads as shown above, is recommended.



CONTROL FUNCTION

ON/OFF Control (For L-ON Mode): The relay is 'ON' up to the set temperature and cuts 'OFF' above the set temperature. As the temperature of the system drops, the relay is switched 'ON' at a temperature slightly lower than the set point.

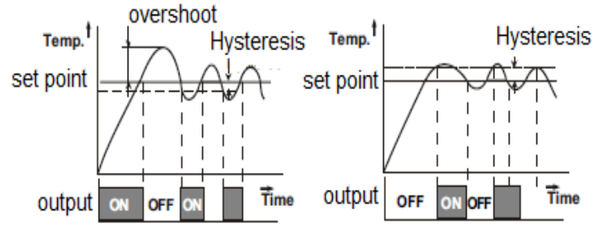


Figure 1.1: Typical Relay operation

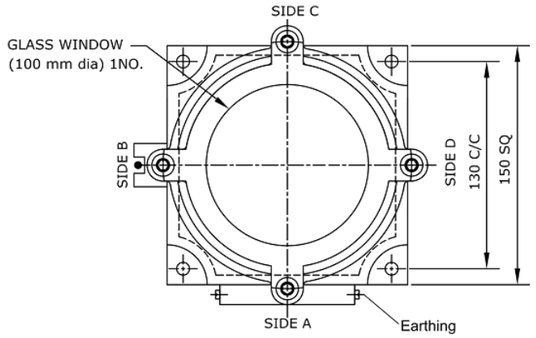
HYSTERESIS: The difference between the temperature at which relay switches 'ON' and at which the relay switches 'OFF' is the hysteresis or dead band.

ORDERING CODE

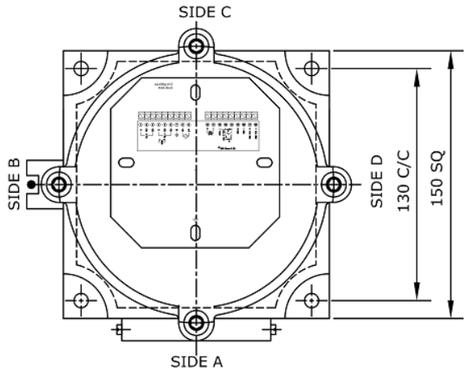
Model	Input-1		Input-2		Power Supply		Options 1 (AO1)		Options 2(AO2 or RS485)		Gas Group	
LC5296-XP-DC	9	Pt-100	9	Pt-100	U1	85-265VAC / 100-300VDC	N	None	N	None	1	IIA & IIB
	C	1 to 5V	C	1 to 5V			1	4-20mA	1	4-20mA	2	IIA, IIB & IIC
	D	0 to 5V	D	0 to 5V	U2	18-36 VDC	2	0-20mA	2	0-20mA		
	E	4-20mA	E	4-20mA			3	1-5V	3	1-5V		
	F	0-20mA	F	0-20mA			4	0-5V	4	0-5V		
	G	0 to 10V					5	0-10V	5	0-10V		
									6	RS485		

MOUNTING DETAILS

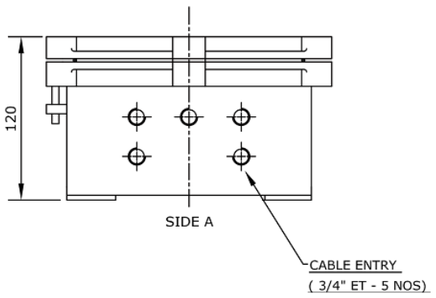
1. Mechanical Details for IIA &IIB Enclosure



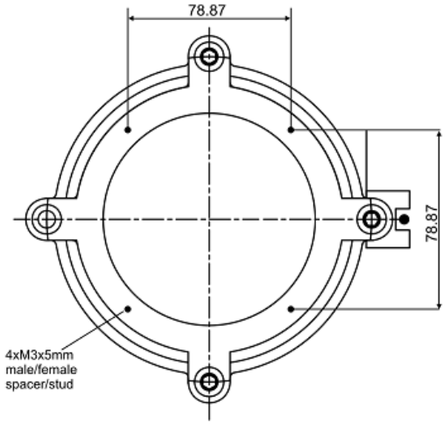
TOP FRONTVIEW OF DEVICE



INTERNAL VIEW WITH TERMINAL CONNECTION DETAILS

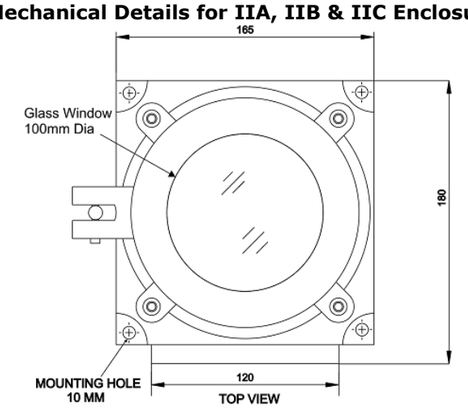


BOTTOM VIEW FOR CABLE ENTRY

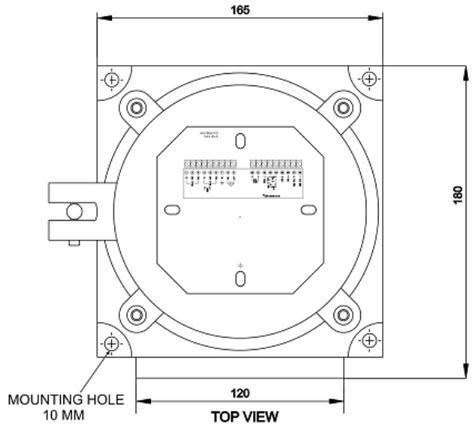


TOP VIEW FOR DISPLAY CARD ASSEMBLY

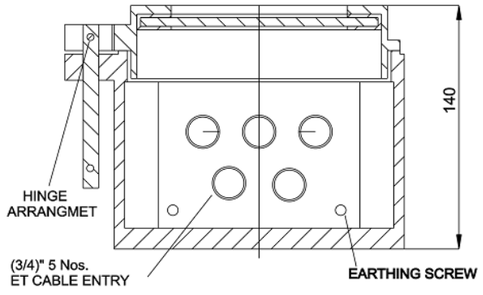
2. Mechanical Details for IIA, IIB & IIC Enclosure



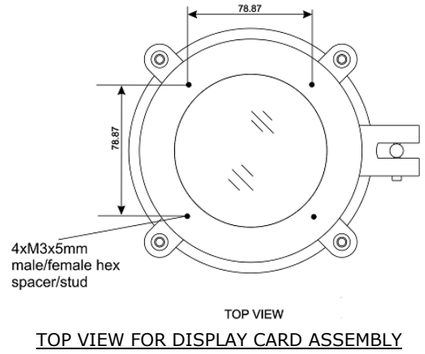
FRONT VIEW OF DEVICE



INTERNAL VIEW WITH TERMINAL CONNECTION DETAILS

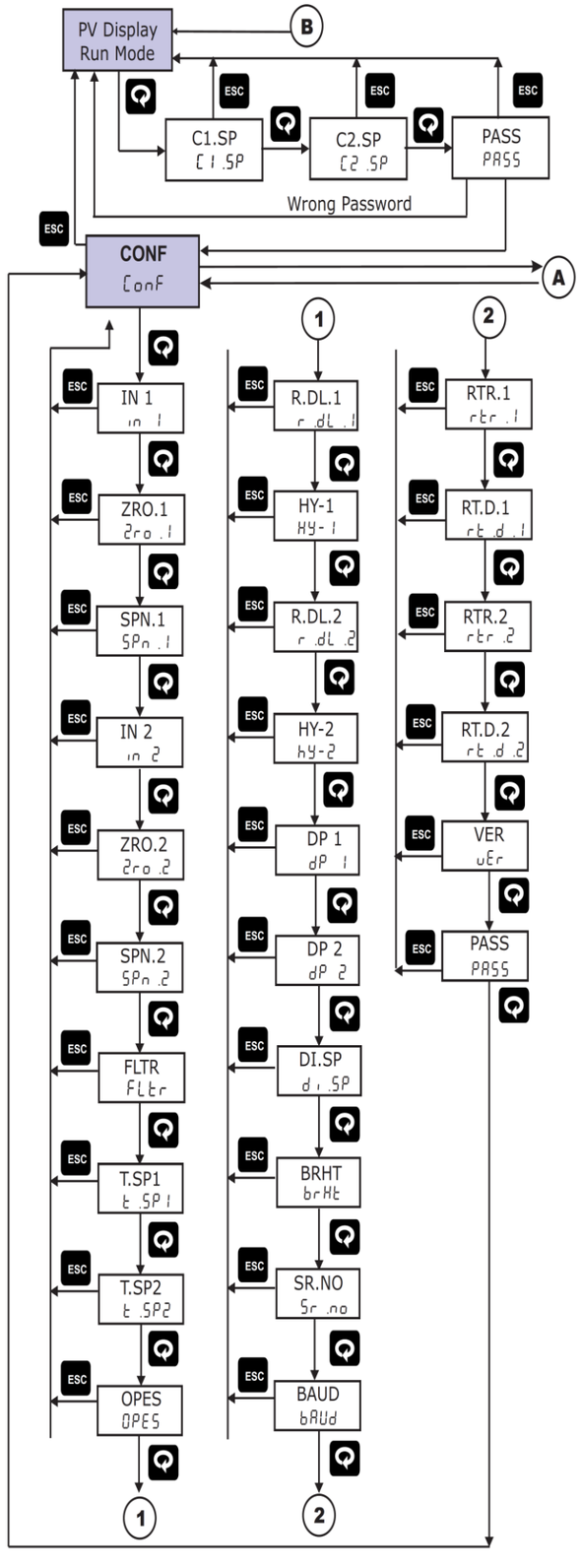


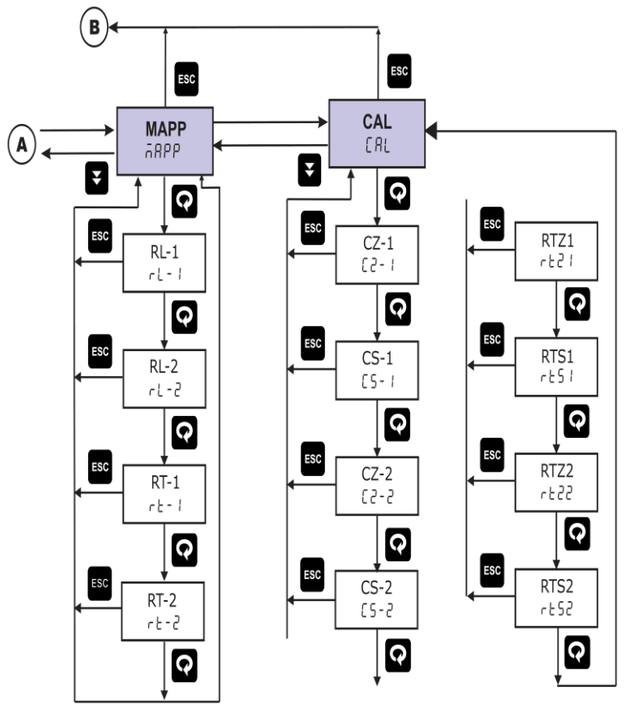
BOTTOM VIEW FOR CABLE ENTRY



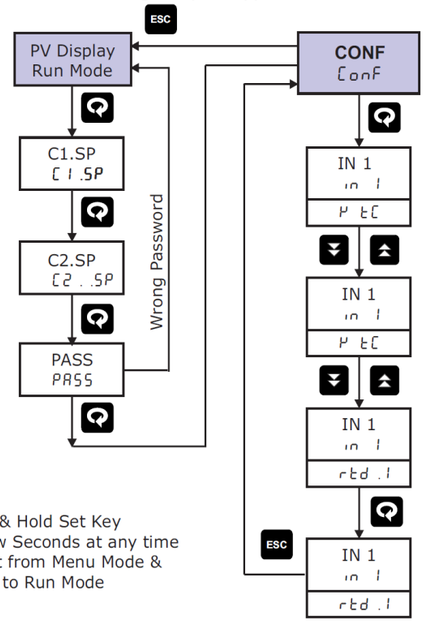
TOP VIEW FOR DISPLAY CARD ASSEMBLY

MENU LAYOUT Of LC5296-XP-DC





How to change Input Type?



Press INC/DEC Key to enter into Edit Mode

Press INC/DEC Key to change this parameter to desired Value

Press Set key to Save the Parameter

If the parameter is successfully saved then Decimal Point of the Right Most Digit will be ON.

Press & Hold Set Key for few Seconds at any time to exit from Menu Mode & Come to Run Mode

For operation manual please visit www.masibus.com
Specifications are subject to change without notice due to continuous improvements.

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