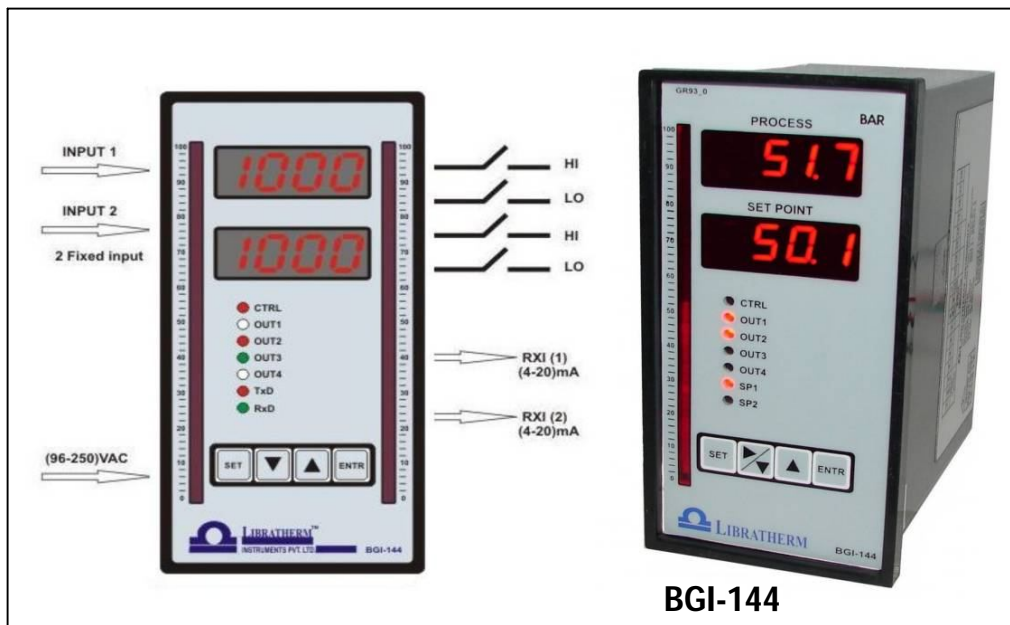


Bar Graph Indicator Model BGI-144 (Product Code 5.1 To 5.3)



Model Wise Description:

Sr. No	Model	Product Description
5.1	BGI-144-U	Bar Graph Indicator for universal Input with 2 to 4 relay outputs
5.2	BGI-144-F	Bar Graph Indicator for Single fixed Input with 2 to 4 relay outputs
5.3	BGI-144-T	Bar Graph Indicator for Two fixed Inputs with 4 relay outputs

Description:

Libratherm offers Microcontroller based universal or single / two fixed input Bar Graph Process Indicator model BGI-144 with both Digital and Bar graph indications. In addition, the instrument provides analogue retransmission output of 4-20mA with built in 24VDC loop supply to power external loop transmitter. The process value is converted into equivalent 0 to 100% value and is displayed on the bar graph using 51 red LEDs for each input with 2% resolution per LED. Two to Four relay outputs are also provided which can be used for high and low alarms for single or dual input. Serial communication on RS485, 2 wire with MODBUS RTU protocol is also available with programmable Modbus ID in slave mode. BGI-144 is available in 144 x 72 x 120mm panel mounting enclosure with ABS bezel, polycarbonate graphics and metal enclosure. BGI-144 works on 90 to 250VAC supply.

Features:

- ❖ Microcontroller based design.
- ❖ Single / Two fixed or Universal Input (8 user selectable).
- ❖ Built in square root extractor for 4-20mA (optional feature)
- ❖ Two relay outputs for High, Low or Deviation per input.
- ❖ 4-20mA retransmission output linearized and proportional to PV.
- ❖ Bright red LED display for PV and SV.
- ❖ 51 LED bar graph display for each PV.
- ❖ Built in 24VDC loop supply.
- ❖ IP 20 metal enclosure.

Applications:

- ◆ Process Control
- ◆ Water Treatment
- ◆ Power Generation
- ◆ Control Panels & Switch boards
- ◆ Monitoring Systems

Technical Specifications:

Models	BGI-144-U(Universal input) , BGI-144-F(Single input) and BGI-144-T (Dual Input)
Input (Single input)	Thermocouple type J, K, R, S, B, C, D or RTD(Pt-100) 2 or 3-wire input, mV and (4 – 20)mA (Universal and user selectable)
Two Inputs	Any two of the above – to be specified.
Square root extractor	Built in to display flow rate – when the input 4-20mA is from DP transmitter. (Optional).
Range	Subject to the full range of the specified input or 0 to 3500 count or -1999 to +1999 with decimal point selection.
Resolution	0.001 /0.01/0.1/ 1 unit Subject to the specified input and range (User selectable decimal point)
Accuracy	Better than $\pm 0.1\%$ of the specified range
Display	4 digit 0.3" Red 7-segment LED display for process value 4 digit 0.3" Red 7-segment LED display for set value 51 red LED for process value in terms of equivalent percentage. Single bar for single input and dual bar for two inputs. Bar width = 5 mm (Bar is defined in terms of percentage of full scale)
Open sensor detection	Shown on the display and outputs are turned off for fail safe operation.

Control Action	ON / OFF with programmable Hysterisis.
No. of Set points	2 to 4 – Each configurable for High / Low / Deviation mode.
Control Outputs	4 independent Relay contacts of (NO-C-NC) rated for 5A@230 VAC. For single input – All 4 relays can be used. (BGI-144-U- F) For 2 inputs - 2 relays can be used per input.(BGI-144-T)
Output indications	Front panel LED indications
Key board settings	Front panel membrane key pad for parameter settings.
Retransmission Signal	Single / Dual 4-20mA signal proportional and linearized / Square root extracted to single / Dual input – 12 bit resolution. RLmax = 400 Ohms.
Loop Supply	18 - 24VDC for external Two / Three wire Transmitter.
Serial Communication	RS485 – 2 wire with MODBUS RTU protocol in slave mode.
Universal Supply Voltage	90 -250 VAC (10VA), 50/60Hz.
Size / Cutout	144(H) x 72(W) x 120(D)mm / 138 x 68 +/- 0.5 mm
Enclosure / Weight	Metal with ABS front and polycarbonate graphic / 1.0 Kg.

Note : Technical specifications are subject to change due to continuous product upgradation at the discretion of manufactures.

Input and Range Selection Table:

Code	Input	Range
A1	Factory set to 8 universal inputs marked (*) below : A2,A3,A4,A5,A6,A13,A15,A17	Subject to input
A2	J type : Fe/Con thermocouple (*)	0 to 760 °C
A3	K type : Cr/Al thermocouple (*)	0 to 1372 °C
A4	R type : Pt/PtRh13% thermocouple (*)	0 to 1768 °C
A5	S type : Pt/PtRh10% - thermocouple (*)	0 to 1768 °C
A6	B type : Pt30%Rh/Pt6%Rh thermocouple (*)	200 to 1820 °C
A7	T type : Cu/Con thermocouple	0 to 350 °C
A8	E type : NiCr/CuNi thermocouple	0 to 900 °C
A9	C type : W5%Re/W26%Re thermocouple	0 to 2300 °C
A10	D type : W3%Re/W25%Re thermocouple	0 to 2300 °C
A11	G type : W/W26%Re thermocouple	0 to 2000 °C
A12	N type : Ni-Cr-Si/Ni-Si-Mg	0 to 1300 °C
A13	Pt-100 (Alpha = 0.00385) DIN 43760 (*)	0.0 to 400.0 °C
A14	Pt-100 (Alpha = 0.00385) DIN 43760	-150.0 to 200.0 °C
A15	4-20mA (*)	0 to 3500 unit
A16	4-20mA	-1500 to +2000 unit
A17	0-10VDC (*)	0 to 3500 unit
A18	0 -10VDC	-1500 to +2000 unit

User may specify the unit of measurement

Ordering Information for Model BGI-144-U, BGI-144-F and BGI-144-T:

Model	A- Input	B- Output-1	C- Output 2	D- Output 3	E- Output-4	F- Retransmission
BGI-144-U	A1- (Factory set to 8 inputs)	B1- (Relay)	C1- (Relay)	D1- (Relay)	E1- (Relay)	F1- (4-20mA x 1)
BGI-144-F	A2 to A18 - (Single Fixed input)	B1 corresponds to 1 st input	C1 corresponds to 1 st input	D2- (Relay) 00- (None)	E2- (Relay) 00- (None)	F2- (4-20mA x 2) F3- (4-20mA x 1 and RS – 485)
BGI-144-T	A2 to A18 – (Two Fixed input both of the same type)			D1 corresponds to 1 st input D2 corresponds to 2 nd input	E1 corresponds to 1 st input E2 corresponds to 2 nd input	F4- (4-20mA x 2 and RS-485) F5- (only RS485) 00- (None)

Examples:

Model	A- Input	B- Output-1	C- Output-2	D- Output-3	E- Output-4	F- Retransmission
BGI-144-U	A1	B1	C1	D2	E2	F1
BGI-144-F	A15	B1	C1	D1	E1	F3
BGI-144-T	A13	B1	C1	D2	E2	F5

Example	Ordering Code	Description
1	BGI-144-U- A1-B1-C1-D2-E2-F1	This is with Universal input types J, K, R, S, B, PT-100, 4-20mA and (0-10) V and 2 relay output s. Retransmission output of 4-20mA proportional to process value.
2	BGI-144-F-A15-B1-C1-D1-E1-F3	This is with Single Fixed input of 4-20mA, in the range of 0 to 3500 count with 4 relay outputs with retransmission output of 4-20 mA proportional to the process value and with RS 485 interface.
3	BGI-144-T-A13-B1-C1-D2-E2-F5	This is with 2 inputs of RTD (Pt-100) type in the range of 0.0 to 400.0 °C. With 2 set point for each input and only RS485 interface.

REMARK :
