# *LED BARGRAPH WITH CIRCULAR STRIP LIGHT*
## *96 x 96 mm* — *BGCL96*

- ***Process and temperature inputs***

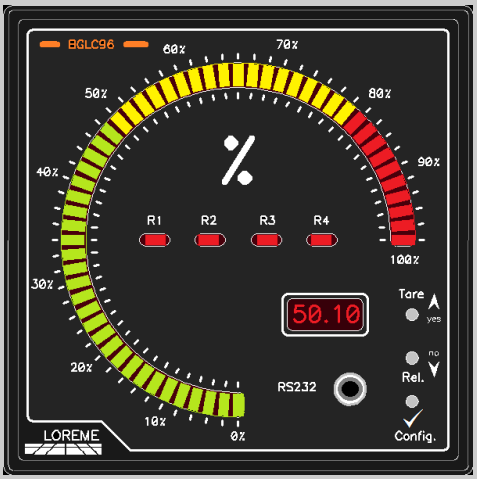
*Volt ,mV, mA, sensor power supply, potentiometer, frequency, strain gauge, thermocouple, PT100)*

*(programmable in front face or with serial link)*

- ***Circular strip light 55 Leds*** *(choice of colors )*
- ***4 digits measure display***
- ***Up to 4 relays output***
- ***option :*** *isolated analog output*

  *RS485 Modbus/Profibus link*

  *ETHERNET Modbus TCP link*
- ***plug in terminals***
- ***Ultra wide input power supply***
- ***Applications :*** *thermometry, weighing, frequency , process signal conditioning, trip amplifier, control, ... ...*




**The BGCL96 is a compact digital bar-graph with dual display (ramp and digital) for universal analog inputs, process and temperature. configurable in plain language (without manual)**

**DESCRIPTION:**

**Process inputs:**
- Current with or without sensor power supply.
- Voltage. - Resistance
- Potentiometer. - Frequency and duty cycle
- Strain gauge - Namur sensor

**Temperature inputs:**
- PT100 2 , 3 and 4 wires
- Thermocouple type : B,E,J,K,R,S,T,N, W3,W5,... (all other thermocouple on request)

**Calculation function:**
- scare root extraction
- Non linear scale (Multisegment Sector) 26 points

**Front panel :**
- circular ramp 55 leds 5 x 2mm (color on request) customizable front scale
- Digital measure display : 4 digits
- 3 push buttons : fully device configuration alarm , measure, offset adjustment, ....
- 4 relay status leds

**Analog output (option : /S)**
- 1 isolated analog output configurable in current or voltage: 0 ... 4 ... 20 mA ou 0...1...5...10 V
- adjustable response time and burn out value

**Relays (option : /R)**
- Maximum 4 changeover relay output usable in alarm, regulation, sensor or input loop breaking detection.
- Threshold, direction, hysteresis and delay individually adjustable on each relay (on & off delay)

**Communication interface:**

Several communication protocol available in option for measure reading:
- RS485 : Modbus , Profibus
- Ethernet : Modbus TCP

**General characteristics:**
- DIN panel : 96x96mm depth: 93mm
- plug in screw or spring loaded terminals up to 1.5mm²
- Ultra wide input switching power supply
- conformal coatings
- Protection Rating IP20 option up to IP65

**Safety / Reliability:**
- high noise immunity, superior to CE marking requirement.
- saving of the configuration parameters in FLASH, safety of data holding > 40 years,
- watchdog supervising the program process,
- galvanic insulation input/output/power supply/communication
- reduction of drift effects thanks to the self-calibration of the input circuit.

**Configuration:**

Full device setting in front panel or via serial link
USB configuration cable supplied separately.
Firmware update possible through serial link
Warning configuration serial link is not insulated from input

Version and order code : Request a quote

| | |
|---|---|
| **BGCL96** | Single strip light with display version |
| **BGCL96/R1** | + 1 relay |
| **BGCL96/R2** | + 2 relays |
| **BGCL96/R3** | + 3 relays |
| **BGCL96/R4** | + 4 relays |
| **BGCL96/S** | + 1isolated analog output |
| **BGCL96/C** | + MODBUS/PROFIBUS LINK |
| **BGCL96/CMTCP** | + ETHERNET MODBUS TCP LINK |

***option*** : /R4 /S, /C, /CMTCP may not be combined

Précisions à 90 jours (20 °C +/- 2 °C) ***FICHE TELECHARGEABLE SUR WWW.LOREME.FR*** **SPECIFICATIONS TECHNIQUES**

## Input

(resolution :14 bits process ,16 bits temperature ; reference 5 ppm)

| Type | Range | Accuracy |
|---|---|---|
| **Low levels voltage** | - 250 à 2000mVdc | +/- 40 uV |
| Input impedance | 1 Mohms | à +/-1 mV |
| *(on two calibers : 250mV and 2000 mV)* | | |
| **Differential voltage** | - 50 à +50mVdc | +/- 10 uV |
| Input impedance | 1 Mohms | |
| **High levels voltage** | - 25 à 200Vdc | +/- 0.02 V |
| Input impedance | 500 kohms | à +/-0.8 V |
| *(on two calibers : 25 V and 200 V)* | | |
| **Courant** | - 4mA à 40 mA | +/- 0.01 mA |
| Input impedance | 50 Ohms | |
| **Résistance** 2, 3 wires | 0 / 380 Ohms | +/- 0.2ohms |
| Measure current | < 700 uA | |
| **Pt100** 2 , 3 wires | -200.....800 °C | +/- 0.3 °C |
| **Pt100** 4 wires | -200.....800 °C | +/- 0.1 °C |
| **Thermocouples :** | | |
| Tc B | +200....1800 °C | +/- 2 °C |
| Tc E | -250.....1000 °C | +/- 0.3 °C |
| Tc J | -200.....600 °C | +/- 0.4 °C |
| Tc K | -200.....1350 °C | +/- 0.5 °C |
| Tc R | 0.....1750 °C | +/- 1.5 °C |
| Tc S | 0.....1600 °C | +/- 1.5 °C |
| Tc T | -250.....400 °C | +/- 0.4 °C |
| Tc N | -250.....1350 °C | +/- 0.5 °C |
| TC W3 | 0.....2300 °C | +/- 2 °C |
| TC W5 | 0.....2300 °C | +/- 2 °C |
| *Compensation T°* | *-10 / 60 °C* | *+/- 0.2 °C* |

*current of breakdown thermocouple detection = 0.5 uA.*

| | | |
|---|---|---|
| **Frequency** | 0.25 / 100 000 Hz | +/- 0.2 % |
| **duty cycle** | 50Hz.....5 KHz | +/- 0,2% |
| input résistance | 100 kohms | |
| measurable range | 4 à 50 V~ peak to peak | |

with automatic suppression of dc voltage
all type of sensor : NPN ,PNP, NAMUR .....

## AUXILIARY

| | | |
|---|---|---|
| sensor power supply | 22 Vdc +/- 5% | (50mA) |
| potentiometer reference | 5 Vdc +/- 0.15% | (20mA) |
| digital input | dry contact / TTL / 24V/... | |

## ALIMENTATION

Wide ac-dc input: (2 versions: standard or low voltage unpolarized)
standard : 21Vdc, 55Vac....à.....265Vac/dc
Low voltage : 12Vdc....à.....30Vdc.
consumption < 3 VA

## Analog output (resolution 12 bits)

| Type | Range | Accuracy |
|---|---|---|
| **Courant** | 0 ... 4 ... 20 mA | +/- 20 µA |
| Permissible load: | 0.....800 Ohms | |
| **Voltage** | 0 ... 10 V | +/- 10 mV |
| Output impedance : | 500 Ohms (internal shunt 0.1%) | |
| Response time (programmable) | | |
| process input | 35 mS.....60 S | |
| temperature input | 100 mS.....60 S | |

## RELAYS ( /R)

Switching capacity 250VAC , 1A (250 VA)

## COMMUNICATION (/C)

RS485 link dual protocol:

| | |
|---|---|
| Modbus | 12kbds….38,4kbds. |
| Profibus-DP | 9600….. 1.5Mbds. |
| Wiring | plug in terminals 2 wires. |
| Liaison Ethernet (RJ45) | 10/100 M |

## RECOMMENDED OPERATING CONDITIONS

| | |
|---|---|
| Operating temperature | -10 à +60 °C |
| Storage temperature | -20 à +85 °C |
| Drift | < 20 PPM / °C |
| Relative humidity | 85 % (no condensed) |
| Weight | ~ 180 g |
| Protection Rating | IP20 |
| Dielectric strength | 1500 Veff continuous |

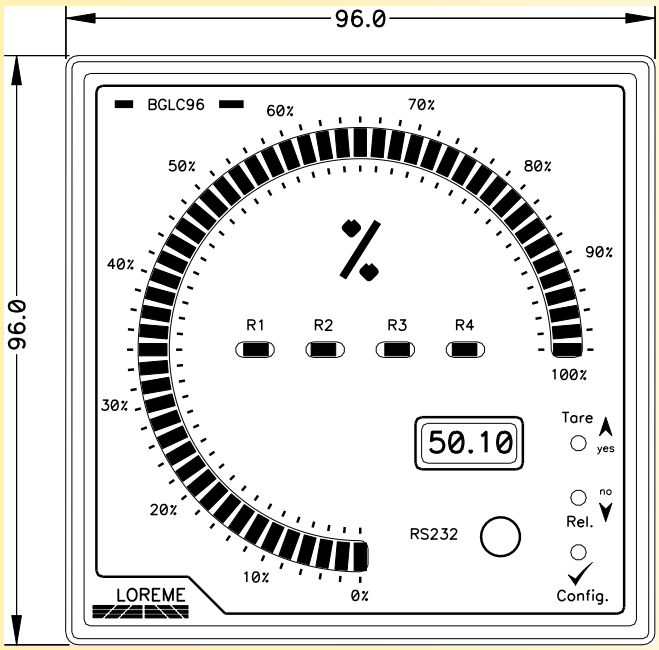
## *Electromagnetic compatibility*

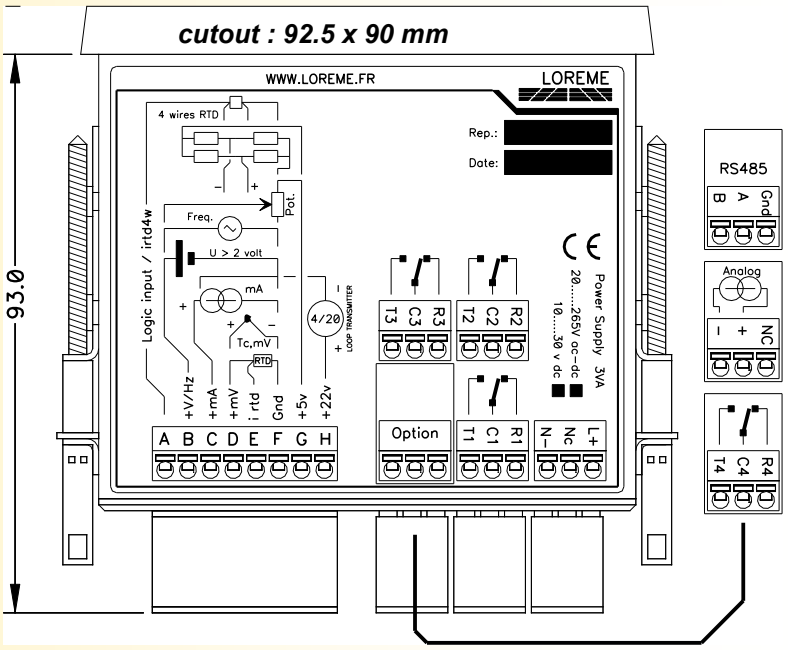
Generic standards: **NFEN50081-2 / NFEN50082-2**

CE

| | | | | | |
|---|---|---|---|---|---|
| **EN55011** | meet | group 1 / class A | | | |
| **EN61000-4-2** | no influence | B | **ENV50140** | < +/- 5 % | A |
| **EN61000-4-4** | < +/- 5 % | B | **ENV50141** | < +/- 10 % | A |
| **EN61000-4-5** | < +/- 5 % | B | **ENV50204** | no influence | A |
| **EN61000-4-8** | no influence | A | | | |
| **EN61000-4-11** | < +/- 5 % | B | DBT | **73/23/CEE** | |

## *WIRING AND OUTLINE DIMENSIONS:*




**E 2** **LOREME** 12, rue des Potiers d'Etain - 57071 Metz ☎ 03.87.76.32.51 - Fax 03.87.76.32.52 - Email: Commercial@Loreme.fr - Technique@Loreme.fr