



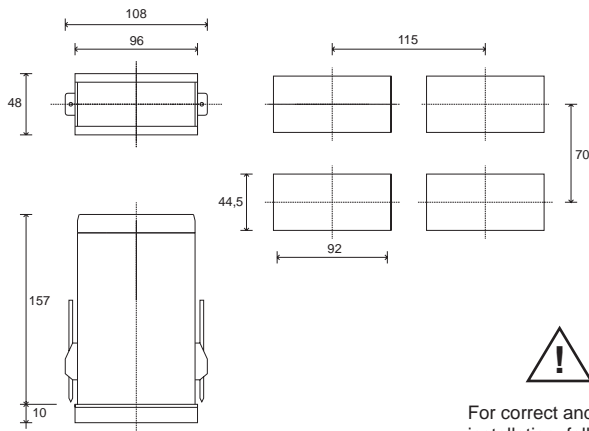
USER'S MANUAL

SOFTWARE VERSION 4.x
code 80330B / Edition 08 - 06/09



1 • INSTALLATION

• Dimensions and cut-out; panel mounting



For correct and safe installation, follow the instructions and observe the warnings contained in this manual.

Panel mounting:

To fix the unit, insert the brackets provided into the seats on either side of the case. To mount two or more units side by side, respect the cut-out dimensions shown in the drawing.

2 • TECHNICAL SPECIFICATIONS

| | |
|------------------------|---|
| Resolution | 4000 pt |
| Accuracy | 0.2% f.s. ± 1 digit for linear inputs 0.5% f.s. ± 1 digit for TC, RTD, mVac inputs |
| Acquisition speed | 160msec per channel |
| Thermocouples | J, K, S, R, T |
| Resistance Thermometer | RTD Pt100 2-wires RTD Pt100 3-wires |
| Power supply | 100...240Vac/dc $\pm 10\%$ 11...27Vac/dc $\pm 10\%$ 50/60Hz, 10VA |
| Relay output | NC/NO selectable with jumpers (5A/220Vac $\cos\phi = 1$) (1,5A $\cos\phi = 0,2$) |
| Logic output | 25V/15mA max |
| Protections | - "Watch-dog" protection circuit for instrument reset in case of interference - 3 SW protection levels - jumper to enable access to calibration from panel keys |
| Work temperature | 0...50°C |
| Function | 8-bit microprocessor |

CE MARKING: The instrument conforms to the European Directives 2004/108/CE and 2006/95/CE with reference to the generic standards: **EN 61000-6-2** (immunity in industrial environment) **EN 61000-6-3** (emission in residential environment) **EN 61010-1** (safety).

MAINTENANCE: Repairs must be done only by trained and specialized personnel.

Cut power to the device before accessing internal parts.

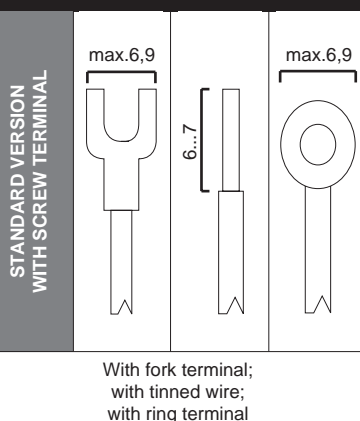
Do not clean the case with hydrocarbon-based solvents (Petrol, Trichlorethylene, etc.). Use of these solvents can reduce the mechanical reliability of the device. Use a cloth dampened in ethyl alcohol or water to clean the external plastic case.

SERVICE: GEF 2308 has a service department. The warranty excludes defects caused by any use not conforming to these instructions

EMC conformity has been tested with the following connections

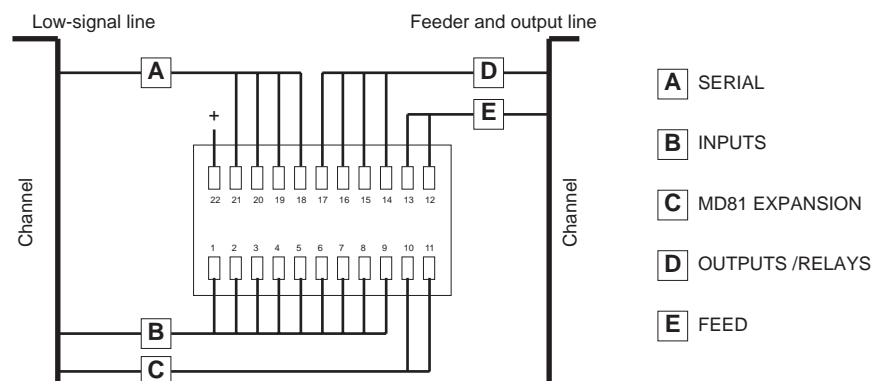
| FUNCTION | CABLE TYPE | LENGTH |
|-----------------------------|---------------------------------|--------|
| Power supply cable | 1 mm ² | 1 m |
| Relay output cable | 1 mm ² | 3,5 m |
| Digital communication wires | 0,35 mm ² | 3,5 m |
| TC input | 0,8 mm ² compensated | 5 m |
| Pt100 input | 1 mm ² | 3 m |

3 • TERMINALS



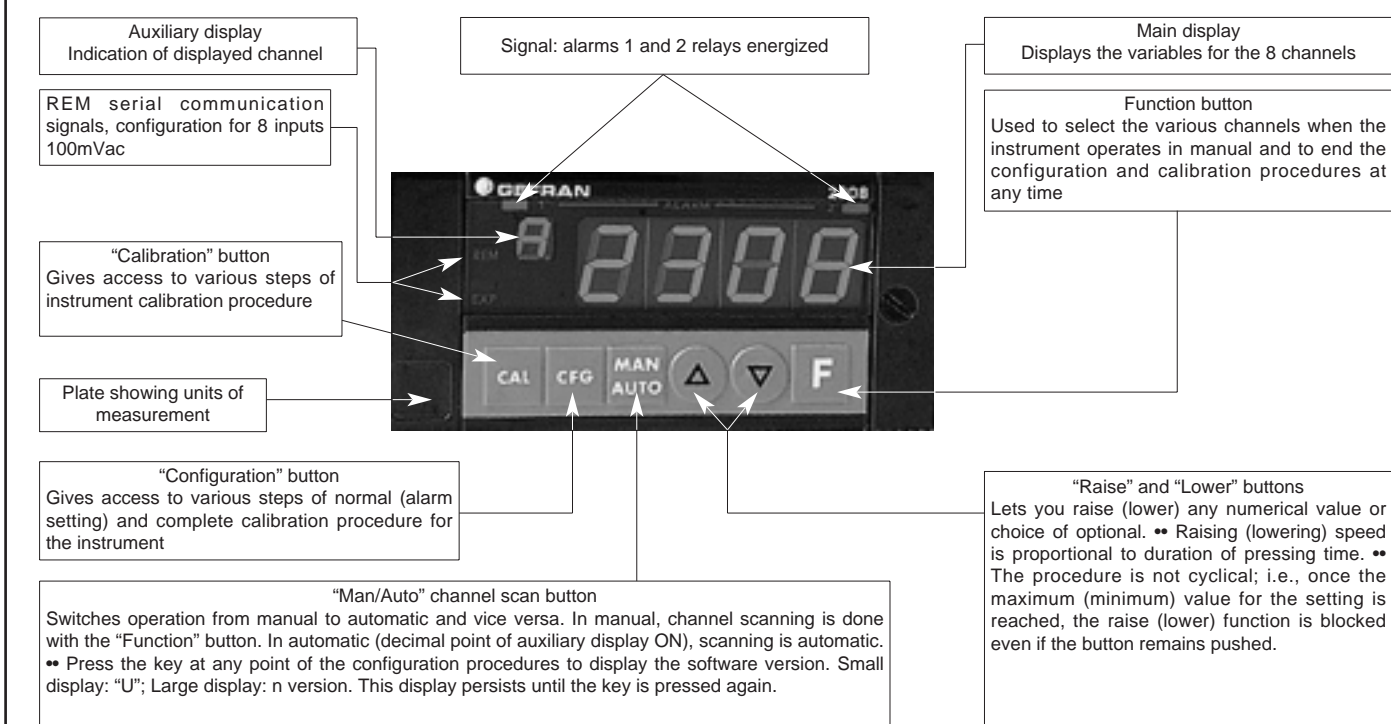
With fork terminal;
with tinned wire;
with ring terminal

4 • SUGGESTED CONNECTIONS

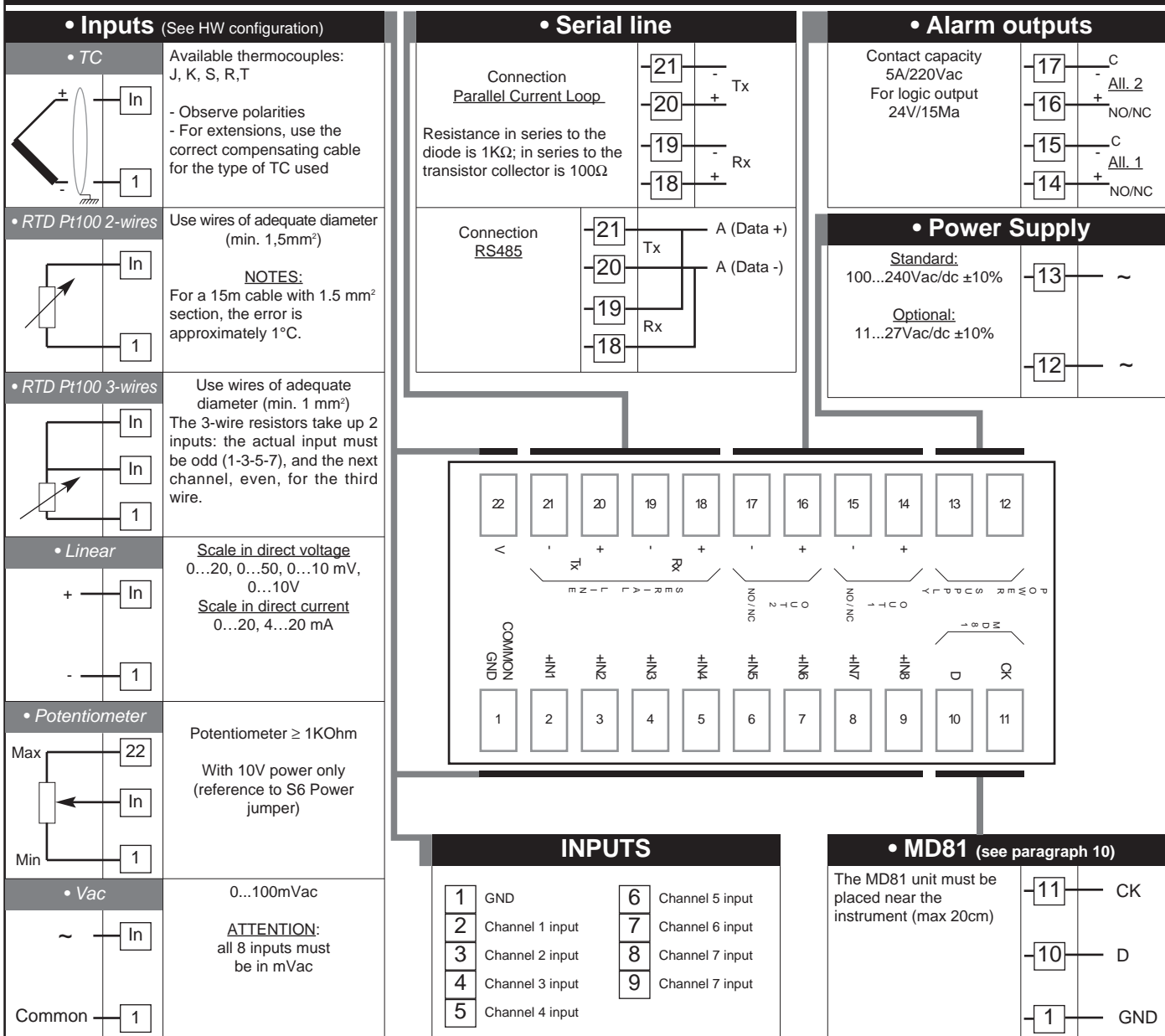


- A** SERIAL
- B** INPUTS
- C** MD81 EXPANSION
- D** OUTPUTS /RELAYS
- E** FEED

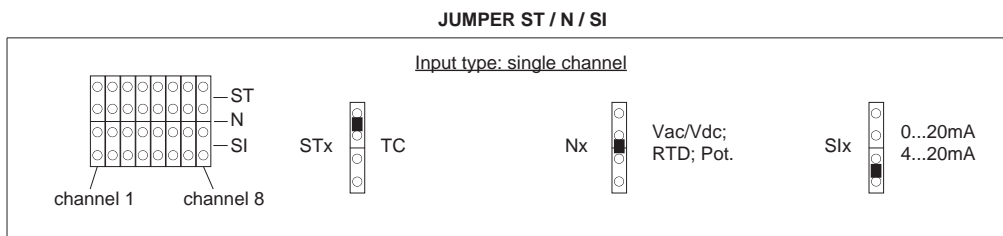
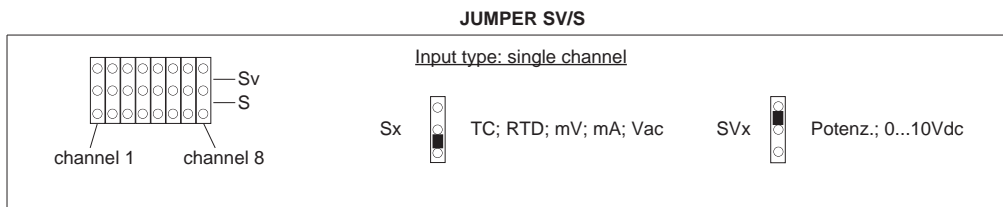
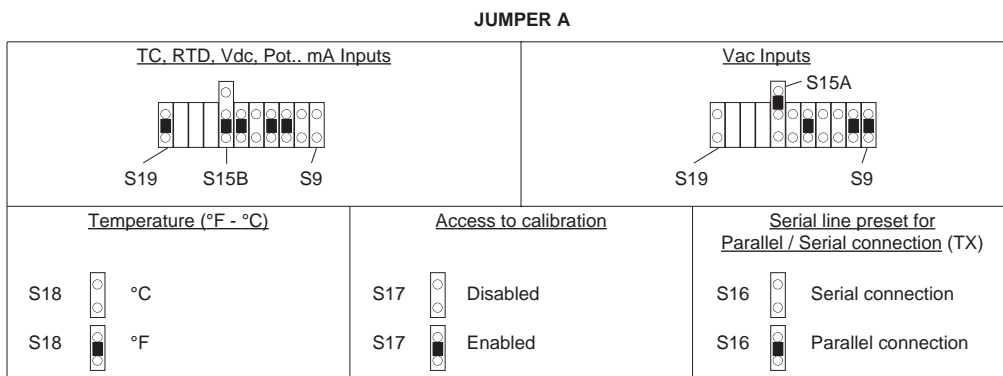
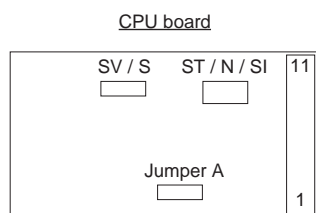
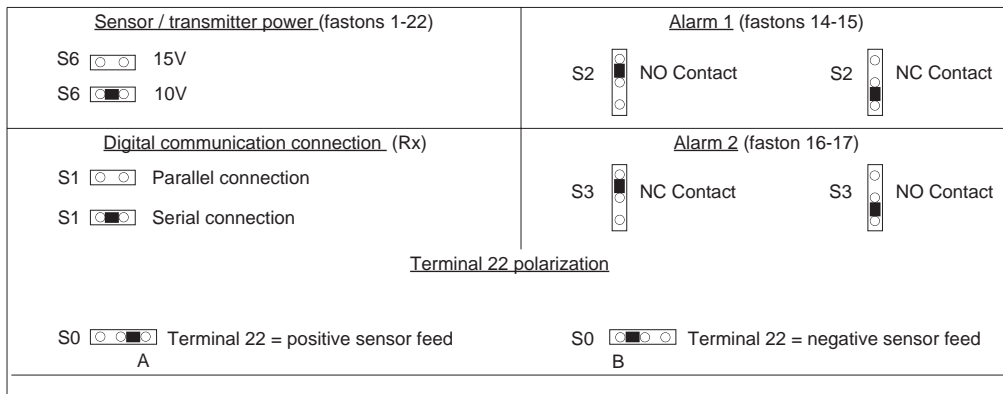
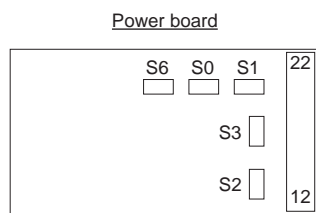
5 • DESCRIPTION OF FACEPLATE



6 • CONNECTIONS

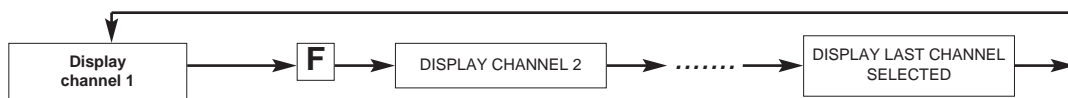


7 • HARDWARE CONFIGURATION

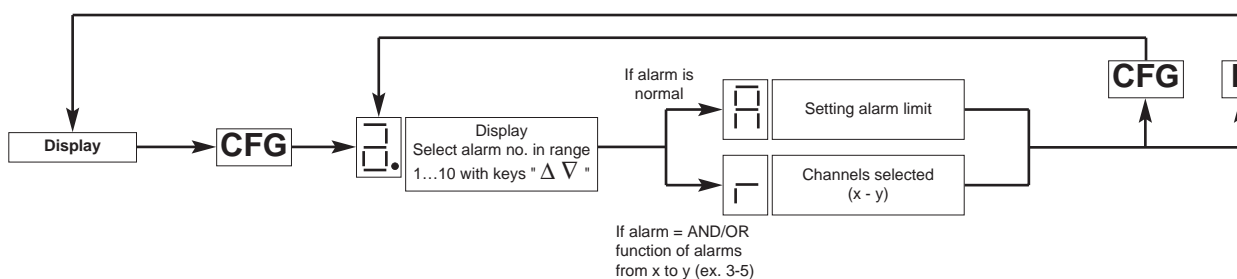


8 • SOFTWARE CONFIGURATION

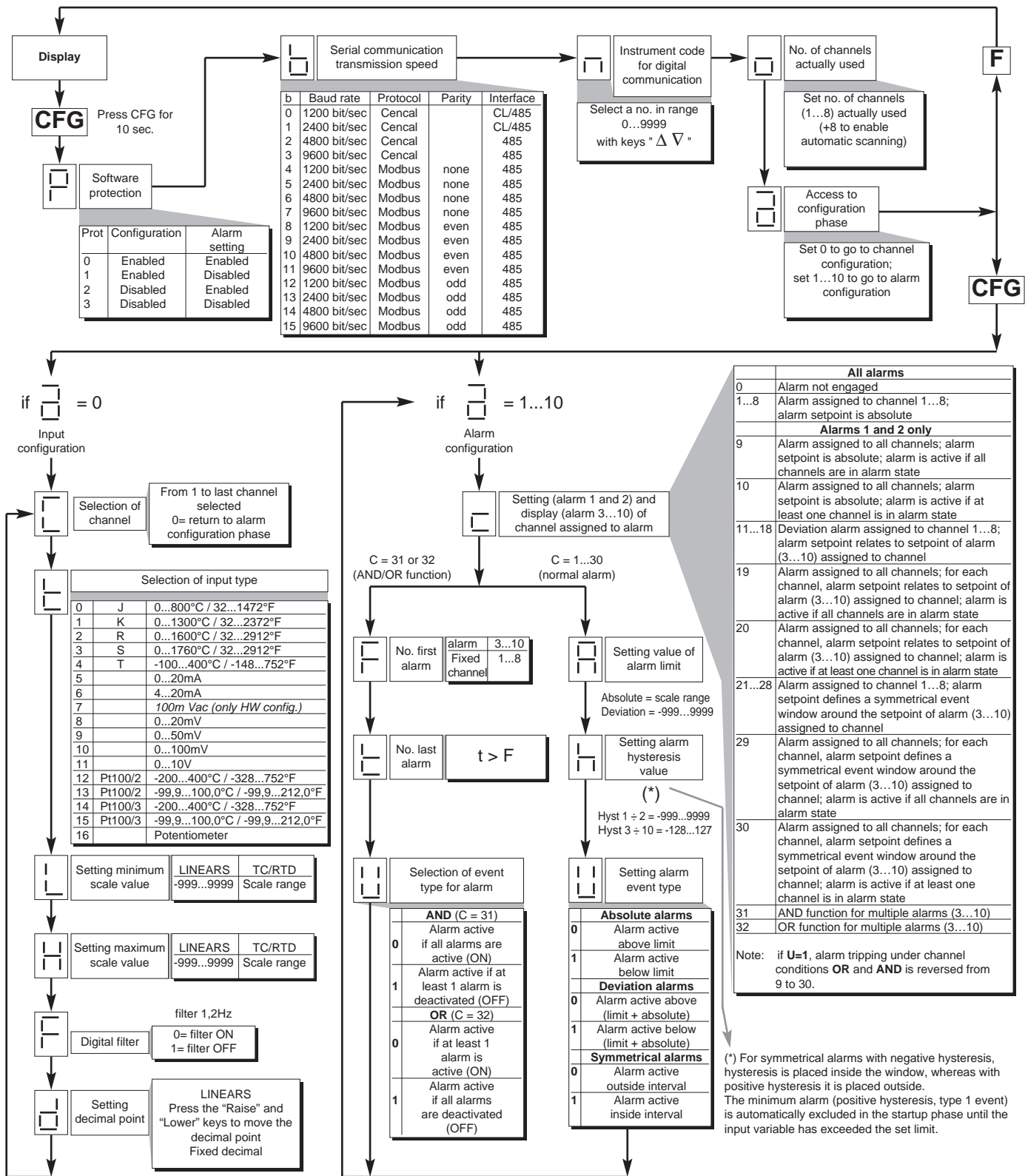
8a • Display



8b • Alarm setting

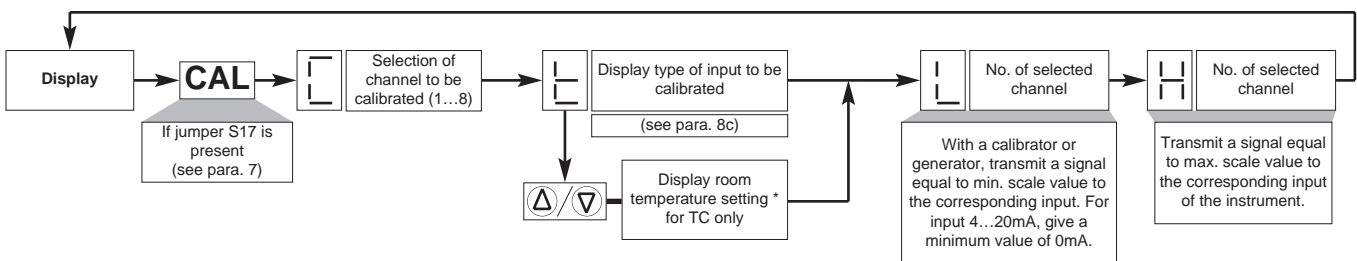


8c • Configuration



Move from one configuration phase to another by pressing the CFG key; press the F key to go to display.

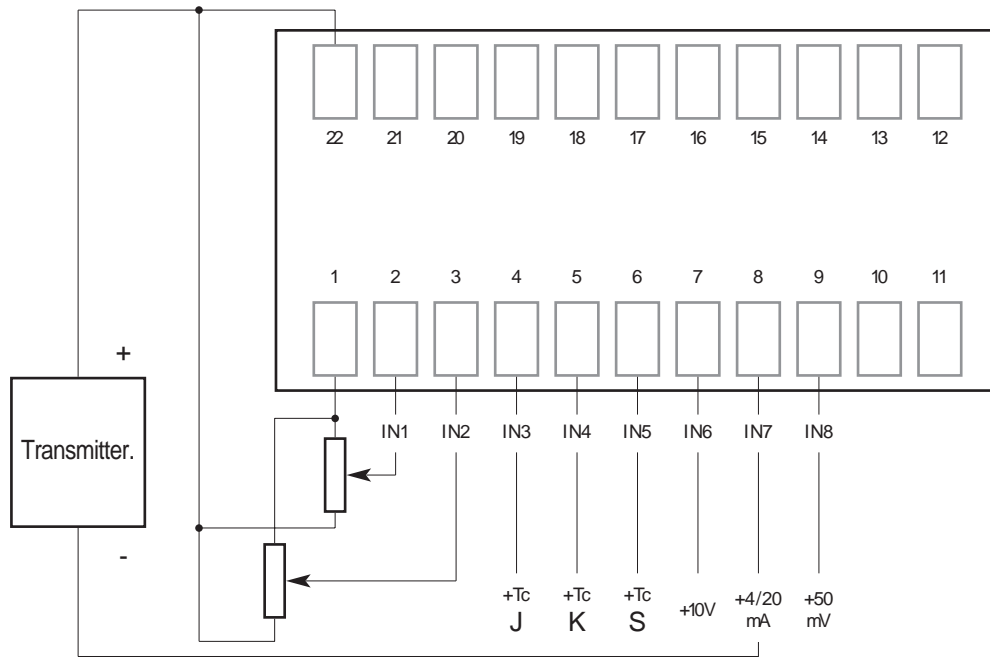
8d • Calibration



ATTENTION: the instrument is supplied calibrated; any additional calibration must be made by a trained technician equipped with the necessary devices. The procedure is irreversible.

9 • CONNECTION EXAMPLES

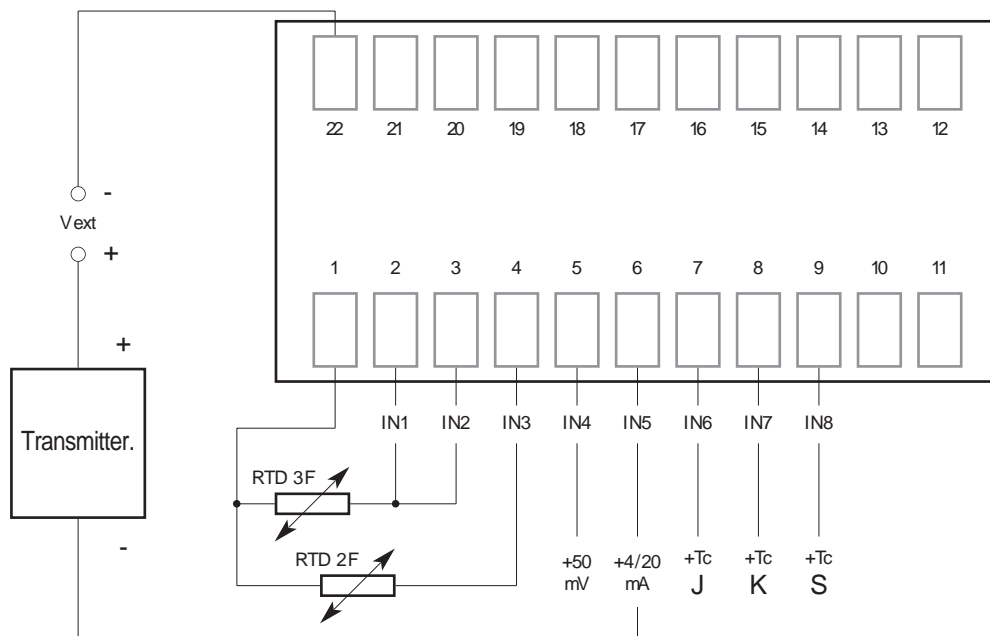
Connection examples 1



| Input no. | Input type | HW configuration jumpers closed (on) | SW configuration t = input type |
|-----------|----------------|---|------------------------------------|
| 1 | Potentiometer | SV1-N1 | 16 |
| 2 | Potentiometer | SV2-N2 | 16 |
| 3 | Thermocouple J | S3-ST3 | 0 |
| 4 | Thermocouple K | S4-ST4 | 1 |
| 5 | Thermocouple S | S5-ST5 | 3 |
| 6 | 0...10V | SV6-N6 | 11 |
| 7 | 4...20mA | S7-SI7 | 6 |
| 8 | 0...50mV | S8-N8 | 9 |

Reference for inputs in mV and TC is terminal 1
(common to all inputs) **S11 - S12 - S14 - S15B - S19 = ON**

Connection examples 2



| Input no. | Input type | HW configuration jumpers closed (on) | SW configuration t = input type |
|-----------|-----------------|---|------------------------------------|
| 1 | RTD 3-wires | S1-N1 | 14 (15) |
| 2 | (3rd wires RTD) | S2-N2 | -1 |
| 3 | RTD 2-wires | S3-N3 | 12 (13) |
| 4 | 0...50mV | S4-N4 | 9 |
| 5 | 4...20mA | S5-SI5 | 6 |
| 6 | Thermocouple J | S6-NT6 | 0 |
| 7 | Thermocouple K | S7-ST7 | 1 |
| 8 | Thermocouple S | S8-ST8 | 3 |

Reference for inputs in mV and TC is terminal 1
(common to all inputs) **S11 - S12 - S14 - S15B - S19 = ON**

10 • ACCESSORIES

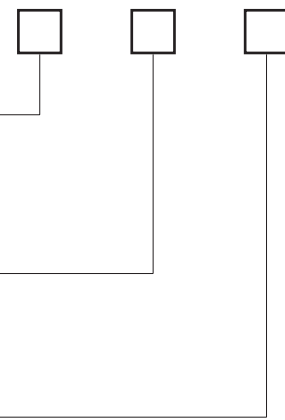
• MD8 - Expansion module for 8 alarm relays -



Order code

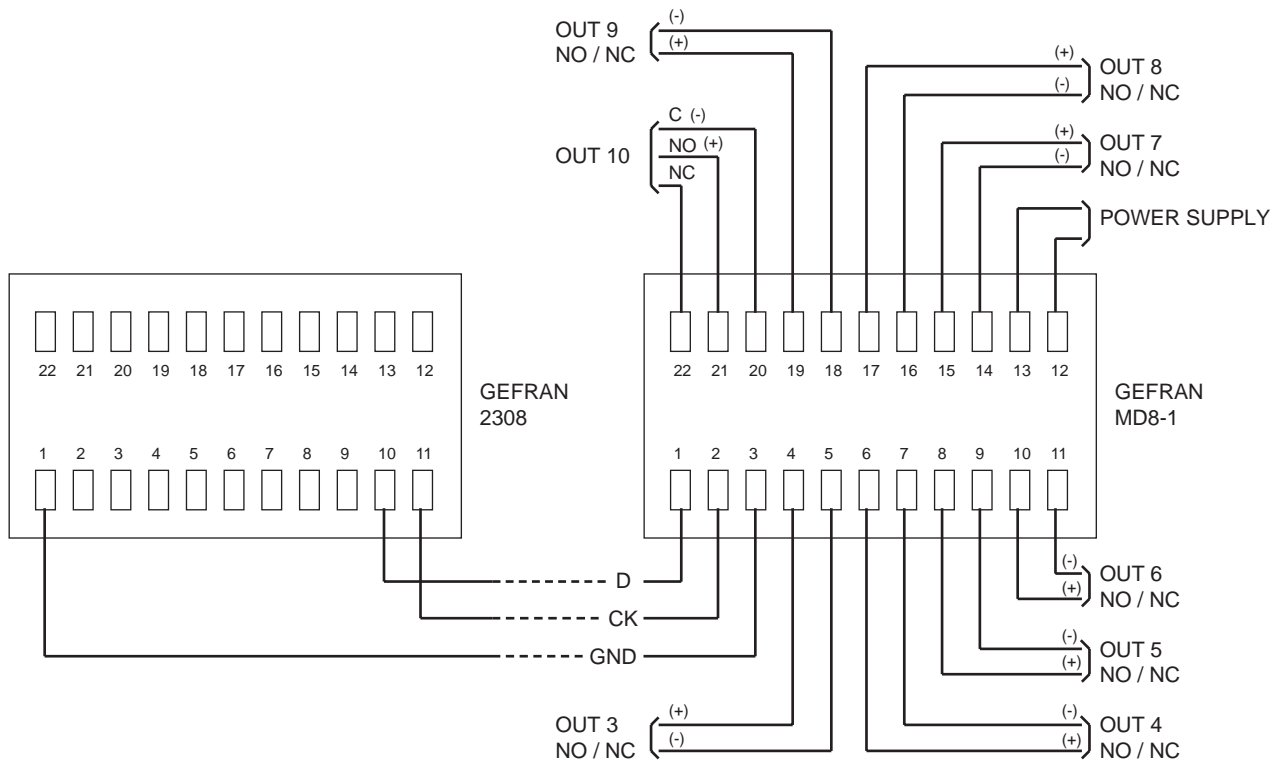
| Version | |
|-----------------------------|-----|
| For model 2300 | 0 |
| For models 3500/4500 - 2308 | 1 |
| Output | |
| Relay | R0* |
| Static | D2 |
| Power supply | |
| 11...27Vac/dc $\pm 10\%$ | 0 |
| 100...240Vac/dc $\pm 10\%$ | 1 |

MD8



* Standard version

CONNECTIONS



TECHNICAL DATA

Signals

8 red LEDs turn on with relays energized and flash when alarm limits are set on master instrument
Red power on LED

Outputs

Relay outputs with NA or NC contact selectable with jumpers. Contact capacity 5A/220Vac to $\cos\phi=1$ (1.5A to $\cos\phi=0.2$). Protection with MOV 275V spark suppressor
Alternate: logic outputs type D2 PNP 24V/15mA max

Power supply

Standard 100...240Vac/dc - 11...27Vac/dc

Absorbed power: 4VA.

Working temperature: 0÷50°C

Case

- Polycarbonato autoestinguente V0; dimensioni frontali 96x48; profondità incasso 152mm; foratura 92x45mm.
- Fissaggio a retroquadro con staffette in dotazione.
- Estraibilità frontale parte elettronica.
- Disponibilità di calotte frontali con guarnizioni fino ad un grado massimo di protezione pari a IP65.

Electrical connections

- Split terminals accept one 6.35 mm faston or two 2.8 mm fastons
- Terminals completely recessed for accident prevention

Weight: approx. 600 gr

11 • ACCESSORIES



Polycarbonate cap
Protection level **IP54**
(frame) grey / (door) transparent

For instruments size 96x96mm (1/4 DIN)
Order code **51065**

For instruments size 48x96mm (1/8 DIN)
Order code **51066**



Polycarbonate cap with rubber gasket
Protection level **IP65**
(frame) grey / (door) transparent

For instruments size 96x96mm (1/4 DIN)
Order code **51064**

For instruments size 48x96mm (1/8 DIN)
Order code **51067**



Dust-proof polycarbonate cap (transparent)

Mod. **CFA110**
48x48mm (1/16 DIN) - order code **51060**

Mod. **CFA120**
48x96mm (1/8 DIN) - order code **51061**

Mod. **CFA220**
96x96mm (1/4 DIN) - order code **51062**



Silicon rubber protection
Protection level **IP65** (transparent)

48x48mm (1/16 DIN) - order code **51183**

48x96mm (1/8 DIN) - order code **51185**

96x96mm (1/4 DIN) - order code **51186**



Instrument hole plug in self-extinguishing
polycarbonate V0 (grey)

Mod. **Q48**, for hole 45x45mm for instruments size 48x48mm
(1/16 DIN) - order code **51177**

Mod. **Q94**, for hole 45x93mm for instruments size 48x96mm
(1/8 DIN) - order code **51178**

Mod. **Q96**, for hole 93x93mm for instruments size 96x96mm
(1/4 DIN) - order code **51179**

ORDER CODE

2308



| DIGITAL COMMUNICATION | |
|-----------------------|----|
| Serial Current Loop | 1* |
| Serial RS485 | 2 |

| ALARM OUTPUT | |
|--------------|-----|
| Relay | R0* |
| Static | D2 |

| POWER SUPPLY | |
|-----------------|----|
| 100...240Vac/dc | 1* |
| 11...27Vac/dc | 0 |

| STANDARD CONFIGURATION Hardware and Software |
|--|
| CH1...CH8 - Thermocouple inputs J 0...800°C |
| Alarms - Setting 500 - Hysteresis -1 - Relay energized above set limit - NO relay contacts |
| Power output for 10VDC external sensor |
| Enable automatic channel scan |
| Configuration and setting enabled |
| Calibration disabled |
| Parallel connection for serial line |

* Positions marked with asterisk indicate standard model

Please, contact GEFTRAN sales people for the codes availability.

• WARNINGS



WARNING: this symbol indicates danger. It is placed near the power supply circuit and near high-voltage relay contacts.

Read the following warnings before installing, connecting or using the device:

- follow instructions precisely when connecting the device.
- always use cables that are suitable for the voltage and current levels indicated in the technical specifications.
- the device has no ON/OFF switch: it switches on immediately when power is turned on. For safety reasons, devices permanently connected to the power supply require a two-phase disconnecting switch with proper marking. Such switch must be located near the device and must be easily reachable by the user. A single switch can control several units.
- if the device is connected to electrically NON-ISOLATED equipment (e.g. thermocouples), a grounding wire must be applied to assure that this connection is not made directly through the machine structure.
- if the device is used in applications where there is risk of injury to persons and/or damage to machines or materials, it MUST be used with auxiliary alarm units. You should be able to check the correct operation of such units during normal operation of the device.
- before using the device, the user must check that all device parameters are correctly set in order to avoid injury to persons and/or damage to property.
- the device must NOT be used in inflammable or explosive environments. It may be connected to units operating in such environments only by means of suitable interfaces in conformity to local safety regulations.
- the device contains components that are sensitive to static electrical discharges. Therefore, take appropriate precautions when handling electronic circuit boards in order to prevent permanent damage to these components.

Installation: installation category II, pollution level 2, double isolation

- power supply lines must be separated from device input and output lines; always check that the supply voltage matches the voltage indicated on the device label.
- install the instrumentation separately from the relays and power switching devices
- do not install high-power remote switches, contactors, relays, thyristor power units (particularly if "phase angle" type), motors, etc... in the same cabinet.
- avoid dust, humidity, corrosive gases and heat sources.
- do not close the ventilation holes; working temperature must be in the range of 0...50°C.

If the device has faston terminals, they must be protected and isolated; if the device has screw terminals, wires should be attached at least in pairs.

• **Power:** supplied from a disconnecting switch with fuse for the device section; path of wires from switch to devices should be as straight as possible; the same supply should not be used to power relays, contactors, solenoid valves, etc.; if the voltage waveform is strongly distorted by thyristor switching units or by electric motors, it is recommended that an isolation transformer be used only for the devices, connecting the screen to ground; it is important for the electrical system to have a good ground connection; voltage between neutral and ground must not exceed 1V and resistance must be less than 60Ω; if the supply voltage is highly variable, use a voltage stabilizer for the device; use line filters in the vicinity of high frequency generators or arc welders; power supply lines must be separated from device input and output lines; always check that the supply voltage matches the voltage indicated on the device label.

• **Input and output connections:** external connected circuits must have double insulation; to connect analog inputs (TC, RTD) you have to: physically separate input wiring from power supply wiring, from output wiring, and from power connections; use twisted and screened cables, with screen connected to ground at only one point; to connect adjustment and alarm outputs (contactors, solenoid valves, motors, fans, etc.), install RC groups (resistor and capacitor in series) in parallel with inductive loads that work in AC (*Note: all capacitors must conform to VDE standards (class x2) and support at least 220 VAC. Resistors must be at least 2W*); fit a 1N4007 diode in parallel with the coil of inductive loads that operate in DC.

GEFRAN spa will not be held liable for any injury to persons and/or damage to property deriving from tampering, from any incorrect or erroneous use, or from any use not conforming to the device specifications.