GEFRAN

40B 96

FORCE, PRESSURE and DISPLACEMENT TRANSDUCERS INDICATOR with INPUT for STRAIN-GAUGE or POTENTIOMETER - ALARM UNITS

Main features

- *Strain-gauge or potentiometer input - configurable by faceplate*
- *Sensor supply check*
- *Easy to calibrate with sensitivity auto-ranging*
- *Protected by a personal code*
- *Configurable by serial link*
- *Internal linearisation for engineering units*
- *Labels provided for the more common physical units*
- *Sampling time and trip intervention programmable between 15 and 120msec with resolution between 4000 and 30000 steps*
- *Retransmission of the measured variable signal*
- *4 trip points, completely configurable from the faceplate*
- *6 wires calibration*
- *Version for magnetostrictive sensors*

Main applications

- *Extrusion lines*
- *Rubber presses*
- *Test benches*
- *Lapping machines*
- *Food processing equipment*
- *Weighing*
- *Pressure trips*
- *Positioners*
- *Motorised potentiometers*

GENERAL

Microprocessor based indicator in both 96x48 (1/8 DIN) formats manufactured with SMT. The instruments have a lexan membrane faceplate (guaranteed to IP65) which has 3 keys, a 5 digit display and 4 indicating LED's for the output statuses. The input signal can be selected from a wide range of sensors:

- *Potentiometer (minimum 100Ω)*
- *Load cell with sensitivity autoranging between 1,5 and 3,3mV/V.*
- *Strain-gauge pressure sensor*
- *Magnetostrictive position sensors*

The selection is made using the faceplate keys.

A digital input (24Vdc/5mA) is available for resetting, hold, flash, peak handling or releasing latch.

The instruments have a maximum of 4 outputs that can be mechanical relays or logic outputs.

One output of 0/4 to 20mA (max. 500Ω) is available for retransmitting the measured input signal.

The retransmission output, the digital input and the third output are options available contemporaneously. Finally, a triac can be fitted to drive resistive loads up to a maximum of 1A at 240V.

*The programming of the instrument is made easy by grouping the parameters in function blocks (**CFG** for the alarm hysteresis, **Inp** for the inputs, **Out** for the outputs...) and by a simplified data entry menu.*

The configuration can be simplified even further using the PC programming kit made up of a connection cable and a menu guide program that runs under Windows (data sheet cod.WINSTRUM).

A configurable personal software protection code (password protection) can be used to restrict the levels of editing and displaying the configuration parameters.

TECHNICAL DATA

INPUTS

Accuracy 0,2% f.s. ±1digit.
Sampling time 120msec with sensor supply check, configurable down to a minimum of 15msec with reduction of the resolution to 4000 steps.
Range: -1999...9999 resolution 1 digit,
-19990...99990 resolution 10 digit,
-1999...28000 resolution 1 digit,
Configurable decimal point position, with over- and under-range indication.
32-segment configurable linearisation can be used.

Strain-gauge

350Ω, maximum sensitivity 3.3mV/V with positive or symmetrical polarisation and calibration that automatically calculates the sensitivity.

Potentiometer

Supply 1,2V >100Ω

Magnetostrictive position sensors

Supply 24Vdc / 100mA

Digital input

PNP: Ri = 4,7KΩ (24V, 5mA) 1500V insulation
NPN: free contact from tension.

Function is configurable as alarm or memory reset, hold, flash, zero, display of the peak value (max., min. or peak to peak).

OUTPUTS

Relay
with NO (NC) contacts rated at 5A/250Vac/30Vdc a $\cos\varphi = 1$.

Logic (only for Out2)
24Vdc (10Vmin a 20mA max).

Triac (only for Out1)
24...240Vac ±10%, 1A max
Snubberless, $I^2t = 128A^2sec$

A maximum of 4 trip points can be set as absolute, deviation or symmetrical deviation alarms. The hysteresis of each alarm is individually configurable.
Alarm masking with exclusion on power up, memory and configurable delay and minimum intervention time.
The trip point may be set at any point on the scale.

Analogue retransmission
resolution 12 bit 0/4...20mA
R max = 500Ω,
0...10V Rmin = 50k.

Serial line
Isolated 2/4 wires, RS422/485 interface (1200, 2400, 4800, 9600, 19200 baud)
Prot.: GEFRAN CENCAL or MODBUS

POWER SUPPLY
Standard:
100...240Vac/dc ± 10% max 18VA
Optional:
11...27Vac/dc ± 10% max 11VA
50/60Hz, protected by an internal fuse (not replaceable by the operator).

POWER SUPPLY TRANSMITTER
24V ±10% unstabilised, 50mA max (100mA max for the 0...20/4...20mA transmitter input model only)
15Vdc max 50mA
for strain-gauge 5Vdc, 10Vdc max 120mA
for potentiometer (>100 Ω) 1,2Vdc

AMBIENT CONDITIONS
Working temperature range: 0 to 50°C
Storage temperature range: -20 to 70°C
Humidity: 20 to 85%Ur non-condensing

WEIGHT
320g. in the complete version
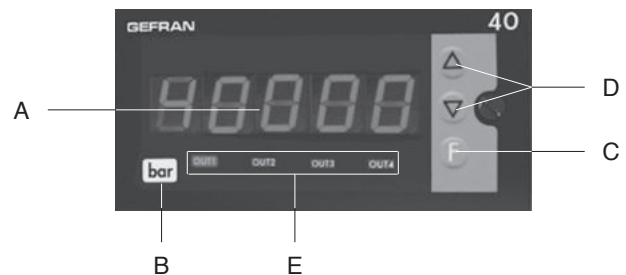
FACEPLATE DESCRIPTION

A - PV display: indication of process variable, [digits h.14mm, (5 digit) Red LED display]
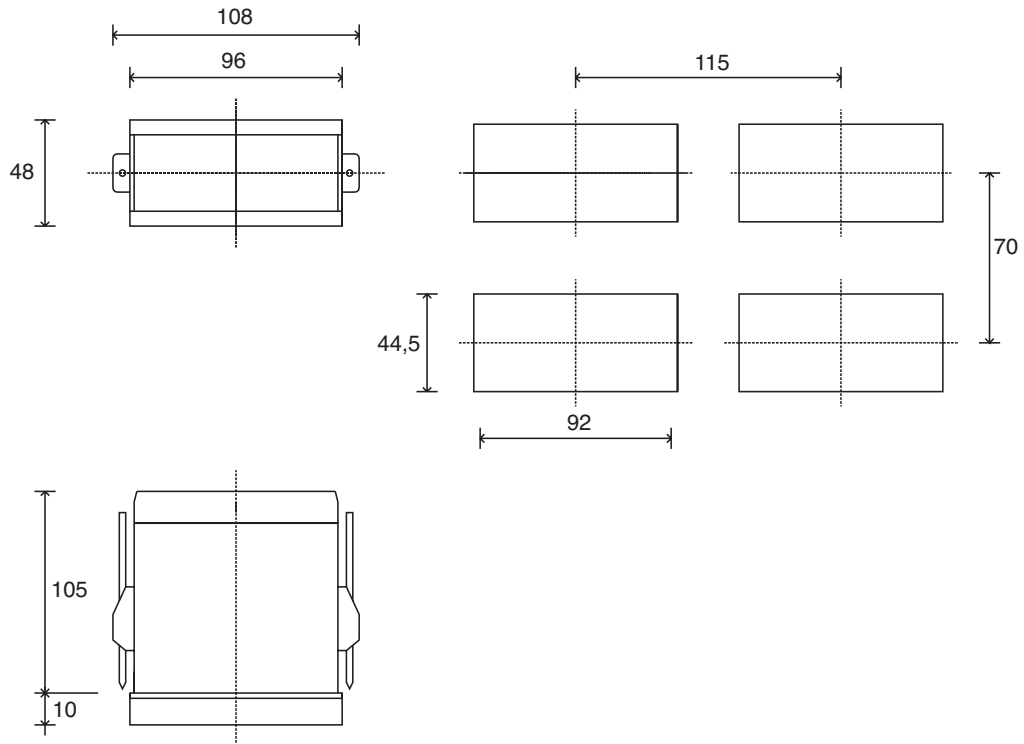**B** - Label for engineering units
C - "Function" key
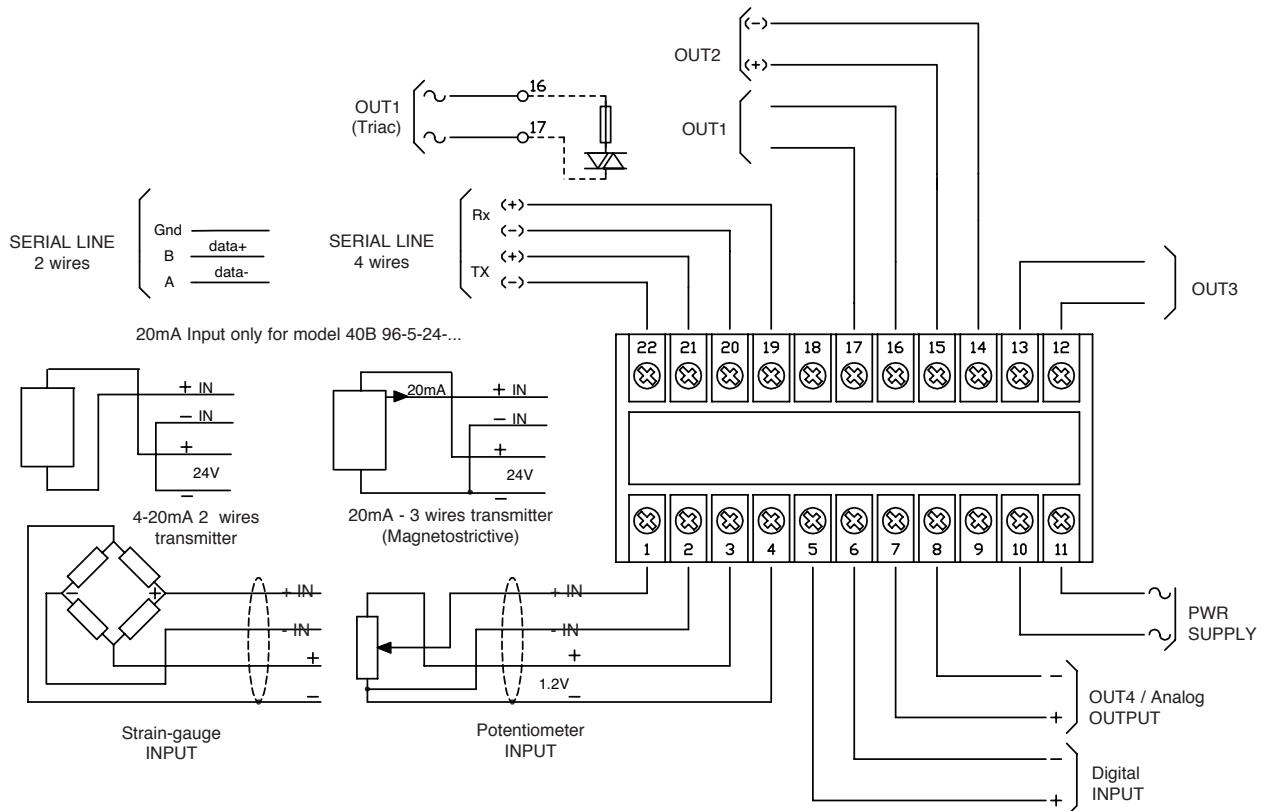**D** - "Raise" and "Lower" keys
E - Indication of the states of the outputs

IP65 faceplate protection

DIMENSIONS and CUT-OUT

108

96

48

115

70

44,5

92

105

10

Dimensions: 96x48mm (1/8DIN)

CONNECTION DIAGRAM

OUT2 (−) (+)

OUT1 (Triac) 16 17

OUT1

SERIAL LINE 2 wires
Gnd
B   data+
A   data−

SERIAL LINE 4 wires
Rx (+) (−)
TX (+) (−)

OUT3

20mA Input only for model 40B 96-5-24-...

+ IN
− IN
+
24V
−

4-20mA 2 wires transmitter

20mA
+ IN
− IN
+
24V
−

20mA - 3 wires transmitter (Magnetostrictive)

| 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

+ IN
− IN
+
−

Strain-gauge INPUT

+ IN
− IN
+
1.2V
−

Potentiometer INPUT

PWR SUPPLY

OUT4 / Analog OUTPUT
+

Digital INPUT
+

⚠ For a correct installation see the warnings in the users' manual

ORDER CODE

40B [96] [5] [ ][ ] [ ] [ ] [ ] [ ][ ]

NR. DIGITS	
5	5

TRANSMITTER POWER SUPPLY	
1,2Vdc potentiometer	0 1
5Vdc	0 5
10Vdc	1 0
15Vdc	1 5
24Vdc (only for 20mA input) *	2 4
All ***	99

OUT 1, OUT 2	
Relay, Relay	R R
Relay, Logic	R D
Triac, None	T O

OUT 3, OUT 4	
None	0 0
Relay, None	R 0
Relay, Relay **	R R

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

SERIAL LINE	
0	None
2	RS 485

DIGITAL INPUT / RETRANSMISSION OUTPUT	
0	None
1	Digital input
2	0/4...20mA (0...10V) retansmision output **
3	Both **

* Specific model for use with transmitter 20mA (es for position magnetostrittive sensor) excludes Output 3, Output 4 and retransmission, all the other models have potentiometer/strain-gauge configurable input

** Out 4 alternative to retransmission output

*** Selectable (standard = 24Vdc)

Please, contact GEFRAN sales people for the codes availability.

GEFRAN spa reserves the right to make any modification of the design or function, at any moment without prior notice