

ENG

**INSTRUMENTATION
INDICATORS ALARM UNITS TIMERS AND COUNTERS**

GEFRAN





THE ACKNOWLEDGED INTERNATIONAL LEADER

Thanks to forty years of experience, Gefran is the world leader in the design and production of solutions for **measuring, controlling, and driving industrial production processes**. We have 14 branches in 12 countries and a network of over 80 worldwide distributors.



QUALITY AND TECHNOLOGY

Gefran indicators are designed to directly **acquire multiple physical variables** such as temperature, pressure, displacement, force/weight, humidity, and many others via normalised signals.



ONE STOP SHOP

Gefran offers complete display solutions for industry, providing its own sensors and ensuring maximum component compatibility and integration.

The numerous models in the catalogue offer different acquisition speeds, read resolutions, and specific functions assignable to auxiliary inputs and to alarm outputs.



SERVICES

PRE AND POST SALES

A team of Gefran experts works with the customer to select the ideal product for its application and to help install and configure devices (customercare@gefran.com).

TRAINING

Gefran offers a wide range of courses at different levels for the technical-commercial study of the Gefran product range as well as specific courses on demand.



SOFTWARE
GF_express

Configuration kit for Gefran instruments by means of PC (Windows environment). Lets you read or write all of the parameters of a single instrument via serial connection.

- > A single software for all models
- > Easy configuration
- > Copy/paste, save recipe, trend functions
- > Rapid configuration of instruments
- > Saving and management of parameter recipes
- > On-line trend and saving of historical data
- > Recovery of factory settings
- > Custom linearization
- > On-line user manual



PLASTICS



MATERIAL TESTS



WEIGHING SYSTEMS



TEST BENCHES



MACHINES FOR WOOD AND MARBLE



ROLLING LINES



ALL GEFRAN INDICATORS FEATURE

- INPUTS**
Configurable universal analogue inputs for main variables and auxiliary analogue/digital inputs for additional functions.
- KEYBOARD**
Keyboard for rapid setting and diagnostics.
- LEDS**
LEDS for constant display of main instrument states.
- DISPLAY**
Clear and immediate display of main variables.
- IP65**
Elevated front panel protection without accessories.

- OUTPUTS**
Various types of outputs for alarm management, input retransmission.
- FLEXIBILITY**
Connection to process via various types of sensors.
- SHARED SOFTWARE**
All models use the same software.
- READY TO USE**
Pre-installed software for zero start-up time.
- EASY TO USE**
Immediate and intuitive parameter settings.

UNIVERSAL MODELS















Gefran indicators and alarm units feature flexibility, simplicity, and compactness. Available in versions measuring 72x36...48x48 and 48x96, they indicate variables such as temperature, displacement, and force.




HIGH PERFORMANCE MODELS

Gefran's 2400 series of indicators provide speed and precision, ensuring the measurement and setpoints of pressures (direct and differential), displacements, forces, temperatures, and process variables read by amplified sensors.


- Calculation capacity**
 - > Ability to compare input variables, engineer measurements, derive flow values.
 - > Use of results of math functions such as value of process/ alarm limit/retransmission output.
- Double channel**
 - > Two main universal analogue inputs for two simultaneous acquisitions with a single instrument.
 - > Direct feeding of up to 6 load cells.
- Easy calibration**
 - > Calibration of input by copying sensor plate data.
 - > Standard calibration with specific menu

MULTICHANNEL MODELS	72X36	48X48 (1/16 DIN)	48X96 (1/8 DIN)	96X96 (1/4 DIN)
High speed High resolution			 4 Channels 2400	 2 Channels °C/°F bar 0...10V 4...20mA 40TB
RPM Frequency			 40F96	 °C/°F Kg 0...10V 4...20mA 40TB
V/Aac	 4A48 40A48		 4A96 - 40A96	 Plastics, Plants
Pressure Force Position	 4B48 40B48		 4B96 - 40B96	 Kg Potentiometers bar Magnetostrictives
Temperature Linear Potentiometers	 40T72	 4T48 40T48	 4T96 - 40T96	 °C/°F 0...10V 4...20mA Potentiometers Plastics, Packaging, Wood, Metal, Ovens

LEGEND:



PC configuration



Modbus

INDICATORS


4T 72 Indicator		4T 48/4T96 Indicator	
Front panel dimensions	72 x 36mm	48 x 48mm (1/16 DIN) / 96 x 48mm (1/8 DIN)	
Number of analog inputs	1	1	
Sampling time	120 - 60 - 30 - 15msec	120msec	
Precision	0,2% \pm 1 digit	0,2% \pm 1 digit	
Maximum resolution	8000 pti	8000 pti	
Input filter	0...200 sec + display hysteresis 0...9,9 scale points	0...200 sec + display hysteresis 0...9,9 scale points	
Zero Offset	Settable by user over entire scale range	Settable by user over entire scale range	
Application	Indicator of physical quantities -999...+9999 (with or without decimal point)	Indicator of physical quantities -999...+9999 (with or without decimal point)	
Thermocouples	J, K, T, E, N, S, R, B, L, G, C, D, C, custom, with scales in °C or °F (IEC 584)	-	
Cold junction compensation	Internal, with automatic compensation	-	
Resistance thermometer	PT100 DIN43710 (3-wires), PT100 Japan, custom	-	
Thermistors	PTC, NTC (K/25°C), custom	-	
Linear	0...20mA, 4...20mA, 0...50mV, 0...1V, 0...5V, 0...10V possible linearization on 32 segments	-	
Potentiometer	(R77 version) Input from potentiometer (min 100 Ω), powered by instrument, 1,2Vdc	Input from potentiometer (min 100 Ω), powered by instrument, 1,2Vdc possible linearization on 32 segments	
Pressure probe Load cells	-	Autorange sensitivity 15...3,3mV/V possible linearization on 32 segments	
Alternating sinusoidal (current transformer)	-	Direct non-isolated input or via transformer in voltage or AC	
Ranges	-	0...2/0...20/0...500Vac 0...20/0...50/0...200mAac 0...1/0...5Aac	
Application	-	Voltmeter, Ammeter	
Power supply for transmitter	18Vdc \pm 10% non-stabilized, 50mA 1,2Vdc for potentiometer >100 Ω	1,2Vdc for potentiometer 5-10Vdc/120mA; 15Vdc/50mA 24Vdc on-stabilized, 50mA	
Power supply	11...27Vdc, 18...27Vdc \pm 10% 50/60Hz, not isolated from sensor	11...27Vac/dc, 100...240Vac/dc; \pm 10% 50/60Hz	
Faceplate protection level	IP65	IP65	
Certifications	-	UL (4A96) UL	

4A 48 / 4A 96 Alternating current and voltage indicator		4B 96 Pressure, force, position indicator	
Front panel dimensions	48 x 48mm (1/16 DIN) / 96 x 48mm (1/8 DIN)	96 x 48mm (1/8 DIN)	
Number of analog inputs	1	1	
Sampling time	120msec	120 - 60 - 30 - 15msec	
Precision	0,2% \pm 1 digit (for 2/20Vac, 20/50mAac, 1Aac) 0,5% \pm 1 digit (for 200Vac, 500Vac, 5Aac)	0,2% \pm 1 digit	
Maximum resolution	8000 pti	16000 pti	
Input filter	0...200 sec + display hysteresis 0...9,9 scale points	0...200 sec + display hysteresis 0...9,9 scale points	
Zero Offset	Settable by user over entire scale range	Settable by user over entire scale range	
Application	Indicator of physical quantities -999...+9999 (with or without decimal point)	Indicator of physical quantities -999...+9999 (resolution 1 digit) -9990...+9990 (resolution 10 digit) position Configurable decimal point position	
Thermocouples	-	-	
Cold junction compensation	-	-	
Resistance thermometer	-	-	
Thermistors	-	-	
Linear	-	-	
Potentiometer	-	Input from potentiometer (min 100 Ω), powered by instrument, 1,2Vdc possible linearization on 32 segments	
Pressure probe Load cells	-	Autorange sensitivity 15...3,3mV/V possible linearization on 32 segments	
Alternating sinusoidal (current transformer)	-	Direct non-isolated input or via transformer in voltage or AC	
Ranges	-	0...2/0...20/0...500Vac 0...20/0...50/0...200mAac 0...1/0...5Aac	
Application	-	Voltmeter, Ammeter	
Power supply for transmitter	-	1,2Vdc for potentiometer 5-10Vdc/120mA; 15Vdc/50mA 24Vdc on-stabilized, 50mA	
Power supply	-	11...27Vac/dc, 100...240Vac/dc; \pm 10% 50/60Hz	
Faceplate protection level	IP65	IP65	
Certifications	UL (4A96)	UL	

ALARM UNITS



Inputs	40T 72 Alarm Unit	40T 48/40T 96 Alarm Unit	40A 48/40A 96 Alternating current and voltage alarm unit
Front panel dimensions	72 x 36mm	48 x 48mm (1/16 DIN) / 96 x 48mm (1/8 DIN)	48 x 48mm (1/16 DIN) / 96 x 48mm (1/8 DIN)
Number of analog inputs	1	1	1
Sampling time	120 - 60 - 30 - 15msec	120msec	120msec
Precision	0,2% ± 1 digit	0,2% f.s. ± 1 digit (for 2/20Vac, 20/50mAac, 1Aac) 0,5% f.s. ± 1 digit (per 200Vac, 500Vac, 5Aac)	0,2% ± 1 digit
Maximum resolution	8000 pti	16000 pti	8000 pti
Input filter	0...200 sec + display hysteresis 0...9,9 scale points	Settable by user over entire scale range	Settable by user over entire scale range
Zero Offset	Indicator of physical quantities -9999...+9999 (with or without decimal point)	Indicator of physical quantities -9999...+9999 (with or without decimal point)	Indicator of physical quantities -9999...+9999 (with or without decimal point)
Application	J, K, T, E, N, S, R, B, L, Cost, U, G, D, C, custom with scales in °C or °F (IEC 584)	Internal, with automatic compensation	Internal, with automatic compensation
Thermocouples	PTC, NTC (IK/25°C), custom	PT100 DIN43710 (3-wires), PT100 Japan, custom	PTC, NTC (IK/25°C), custom
Cold junction compensation	0...20mA, 4...20mA, 0...60mV, 0...1V, 0...5V, 0...10V	Possible linearization on 32 segments	Possible linearization on 32 segments
Resistance thermometer	(RTT version) input from potentiometer (min 100Ω), powered by instrument 12Vdc possible linearization on 32 segments		
Linear			
Potentiometer			
Pressure probe Load cells			
Alternating sinusoidal (current transformer)	Direct non-isolated input or via transformer in voltage or AC	0...20, 20/0...200/0...500Vac	0...20, 20/0...200/0...500Vac
Ranges	0...20/0...50/0...200mAac, 0...1/0...5Aac		0...20/0...50/0...200mAac, 0...1/0...5Aac
Digital communication	RS485; 1200...19200 baud RTU, CENCAL GEFTRAN	RS485; 1200...19200 baud MODBUS RTU, CENCAL GEFTRAN	RS485; 1200...19200 baud MODBUS RTU
Digital input	Optoisolated passive PNP Isolated 1500V	Optoisolated passive PNP Isolated 1500V	Optoisolated passive PNP Isolated 1500V
Application	Tare zero, reset alarm latches, Hold, Flash	Tare zero, reset alarm latches, Hold, Flash	Tare zero, reset alarm latches, Hold, Flash
Outputs	max 3	max 4	max 3
Relay	max 5A, 250V resistive load cosp = 1	max 5A, 250V resistive load cosp = 1	max 5A, 250V resistive load cosp = 1
Application	Alarm units, alarms, on/off control	Alarm units, alarms, on/off control	Alarm units, alarms
Logic	With 18Vac/dc power supply Rout 560Ω (6V/20mA)	24V (10V min / 20mA max)	11V Rout 220Ω (6V/20mA)
Application	Interception, alarm, On/Off Control	Alarm units, alarms	Alarm units, alarms
Triac	24...240Vac ± 10% 2A max	24...240Vac ± 10% 2A max (for mod.40A/96)	24...240Vac ± 10% 1A max
Application	Alarm units, alarms, on/off control	Alarm units, alarms	Alarm units, alarms
Analog	4...20mA (R max 600) res. 12bit, not isolated	0...10V, 4...20mA (R max 5000) res. 12bit, not isolated	4...20mA (R max 1500) res. 12bit, non isolated
Application	Retransmission of variable	Retransmission of variable	Retransmission of variable
Power supply sensor or transmitter	18Vdc; 50mA	24Vdc ± 10% non-stabilized, 50mA 15Vdc for transmitter, 50mA 1,2V for potentiometer	24Vdc ± 10% non-stabilized, 50mA 15Vdc for transmitter, 50mA 1,2V for potentiometer
Power supply	11...27Vdc; 18...27Vdc; +10% 50/60Hz not isolated from sensor	11...27Vdc/dc; 100...240Vdc/dc; ±10% 50/60Hz	11...27Vdc/dc; 100...240Vdc/dc; ±10% 50/60Hz
Faceplate protection level	IP65	IP65	IP65
Certifications	UL	UL	UL (40A/96)

TIMERS, COUNTERS



Inputs	55 Multiscalar timer with digital setting	550 Timer Counter	556 Timer Counter/Frequency meter
Front panel dimensions	48 x 48mm (1/16 DIN)	48 x 48mm (1/16 DIN)	48 x 48mm (1/16 DIN)
Display	Red LED on during timing interval	3-digit display with 14mm green LEDs	2 x 4 digit display with 10/7mm green LEDs
Operating principle	Digital logic	Microprocessor	Microprocessor
Inputs	2 control inputs NPN configurable	3 control inputs NPN configurable	3 control inputs NPN configurable
Full scale Times/counts	999 sec 999 sec 999 min 999 h	Timer: 999 sec 999 sec 999 min 999 h Counter: max 4 digit (999) with multiplication 1; 2; 10; 100; X2	Timer: 9999 sec 9999 sec (999) with multiplication 1; 2; 10; 100; X2 Counter: max 4 digit (999) with multiplication 1; 2; 10; 100; X2
Outputs	2 relays 5A/250Vac cosp = 1	1 relays 5A/250Vac cosp = 1	1 relays 5A/250Vac cosp = 1
Max frequency Of control inputs	100Hz	Selectable maximum frequency (with duty cycle 50%) 100Hz, 1kHz, 5kHz selectable	Selectable maximum frequency (with duty cycle 50%) 100Hz, 1kHz, 5kHz selectable
Trip delay	5 msec	max 6 msec	max 6 msec
Digital Communication			
Sensor or Transmitter Power supply			12Vdc; 30mA
Power supply	24/48Vdc ±10% 50/60Hz 6VA max 110/220Vac- 120/240Vac ±10% 24Vdc ±10% 50/60Hz 3VA max	110/220Vac ±10% 120/240Vac ±10% 24Vdc ±10% 50/60Hz 3VA max	110/220Vac ±10% 120/240Vac ±10% 24Vdc ±10% 50/60Hz 5VA max
Notes	Setting the scale with preslector	• Quartz time base • 6 time scales, 4 types of timer/counter, 4 frequency meter function modes • 6 output functions configurable from keyboard • Count sequence is displayed directly in engineering units in counts retained in absence of power supply	• Quartz time base • 6 time scales, 4 types of timer/counter, 4 frequency meter function modes • 6 output functions configurable from keyboard • Count sequence is displayed directly in engineering units in counts retained in absence of power supply
Faceplate protection level	IP20 (IP65 with protective cover)	IP54 (IP65 with protective cover)	IP54 (IP65 with protective cover)

ALARM UNITS



		40TB Temperature and pressure alarm unit	40F 96 Frequency Indicator
Front panel dimensions	96 x 96mm (1/4 DIN)		
Inputs	1 mech. contact, logic or alternating voltage drive		
Number of analog inputs	2		
Sampling time	120 • 60 • 30 • 15msec		
Precision	0.2% ± 1 digit		
Maximum resolution	16000 pti		
Input filter	0..200 sec +- display hysteresis 0..99 scale points		
Zero Offset	Settable by user over entire scale range		
Application	Indicator of frequencies 0...9999 (automatic or settable decimal point)		
Types	J, K, T, E, N, S, R, B, L00st, U, G, D, C, Custom with scale in °C or °F, IEC 584)		
Thermocouples	Internal, with automatic compensation		
Resistance thermometer	PT100, DIN43710 (3-wires), PT100, Japan		
Thermistors	PTC, NTC (IK/25°C)		
Linear	0..20mA, 4..20mA, 0..60mV, 0..1V, 0..5V, 0..10V, R1 > 500Ω for voltage signals ≤ 1V, R1 > 20kΩ for voltage signals ≥ 1V, R1 = 500Ω for current signals Possible linearization on 32 segments		
Potentiometer	Input from potentiometer (min 100Ω) powered by instrument 12Vdc		
Pressure probe Load cells	Autorange sensitivity 1.5...3.3mV/V		
Frequency	Input from inductive or capacitive proximity encoder NAMUR 2 or 3-wires limit switch Input in alternating voltage 0.5...500V		
Type	Input frequency ranges ≤ 20KHz		
Display	Frequency meter with or without automatic scale and decimal point change, input frequency selectable in ranges: 9999; 9999; 9999; 9999		
Application	Revolution counter or frequency meter with programmable sampling time		
Digital Input	2 inputs from voltage-free contact		
Outputs	Tare zero, reset alarm latches, Hold, Flash max 3		
Relay	max 5A, 250V resistive load $\cos\phi \approx 1$ Alarm units, alarms		
Logic	11V Rout 220Ω(6V/20mA) Alarm units, alarms		
Triac	24...240V ± 10% 3A max. Alarm units, alarms		
Analog	4...20mA (R max 1500) resolution 12bit non isolated Retransmission of variable		
Digital communication	Configurable		
Sensor or transmitter power supply	RS485; RS232 1200...19200 baud MODBUS RTU 12Vdc for potentiometer > 1000; 5.10Vdc max 120A for strain gauge 15Vdc max/80mA; 24Vdc max 50mA for transm. 2 fill		
Power supply	100...240Vac/dc ± 10% 20...27Vdc/dc ± 10% 50/60Hz		
Faceplate protection level	IP65		
Certifications	UL		



		2400 Fast Indicator	230B Multichannel Indicator
Inputs	96 x 48mm (1/8 DIN)		
Number of analog inputs	2 Main, 2 Auxiliaries		
Sampling time	2 msec (ch1, ch2) 10 msec (ch3, ch4)		
Precision	0.1% f.s. ± 1digit (0.2% f.s. for TC)		
Maximum resolution	100000 pti		
Input filter	0.0...2000 sec input reading, 0.0...99 sec display		
Zero Offset	Settable by user over entire scale range		
Application	Indicator of pressure, forces, weight, shift; physical quantities -19999...+99999 settable decimal point		
Types	J, K, R, S, T with scale in °C or °F		
Thermocouples	Internal / external		
Resistance thermometer	RTD 2/3/4-wires, PT100, scale in °C or °F		
Thermistors	Internal, with automatic compensation		
Linear	Strain gauge: E/10Vdc 200mA, 350Ω Potentiometer: >100Ω, R1 >10MΩ, @ 2.5Vdc Dc linear, 0/4...20mA (R1 = 500, ≤±100mV), R1 > 10MΩ, 1V, ±10V, R1 > 2MΩ; Auxiliary, 0/10...10V (R1 ≥ 2MΩ), 0/4...20mA (R1 = 500) Possible linearization on 64 segments		
Potentiometer	≥100Ω, R1 > 10MΩ		
Pressure probe Load cells	Strain gauge 350Ω, sensitivity 1.5...4mV/V		
Frequency	2, NPN, PNP, optoisolated, configurable function		
Digital Input	Reset, Zero, Tare, Calibration, Loc/Rem, Hold, Flash max 2 relay or logic; can be expanded up to 10 relay or logic outputs with MD81		
Outputs	5A/250V, contacts, resistive load $\cos\phi \approx 1$ Alarm units, alarms		
Relay	24Vdc (20mA, max.12V)		
Logic	Alarm units, alarms		
Triac	24Vdc Rout=47Ω (20mA, max.12V)		
Analog	Isolated 1500V, 0/4...20mA, Rmax = 500Ω; ±10V, resolution 0.03%, configurable via software PV retransmission, auxiliary inputs, peak protocol MOD BUS RTU / PROFIBUS DP Isolated RS485 / RS232 (max 115200 baud), protocol MOD BUS RTU / PROFIBUS DP Isolated 1500V, 5, 10Vdc/200mA o 24Vdc, ±5% 100mA 11...27Vdc/dc ± 10%; 100...240Vdc/dc ± 10% 50/60Hz, 10VA max., internal fuse		
Digital communication	IP65		
Sensor or transmitter power supply	UL		