



Weight measurement instruments
Catalogue

GINEERS Ltd. is a manufacturer of various measurement and indication industrial devices. There are different series and dimensions, suitable for various applications. We also offer standard and unique solutions in the field of automation and process control, weight measurement, integrated systems for remote reading of data and physical quantities. Among that, we design and create suitable software, which can also be unique according to the requirements of particular client. Our weight measurement electronic indicators are generally two types - simplified weigh measure indicator, and a more complex one including many functions. Both are designed to be universal - they can be connected to random tensometric load cell and almost any kind of scale (according to OIML R76 standard) can be made. The additional functions are price calculating, counting functions, measuring in percent F.S., printing labels, connecting in network, sending data to a computer or PLC, controlling external devices such as relay switch. Every scale oriented parameter can be set up (access is both hardware and software way) by the user. Because we design it, of course we can change anything, if a client has request.

If you have any questions or want to know more about our devices, please do not hesitate to contact us!

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G1602

G1602 is a universal microcontroller unit for weighing. The unit general purpose is to measure mass in all kinds of applications, but could also be used in specific tasks. The user can change all metrological parameters of the scale (according to OIML R76-1), and also to use additional functions such as counting pieces, measure the weight in percent, connection to personal computer and so on. Special modes are implemented to protect the measurement against malicious acts. The unit comes in plastic box with protection class Ip55, but in special cases (special order from the client) the protection class can be up to IP67. The large display and ergonomic keyboard allows easy reading of the result and comfortable work. Applies the requirements of EN 45501:2001 (OIML R76-1).

G1602 adjustable parameters:

| | |
|--|--------------------------------------|
| Number of measurement divisions | 300 ÷ 30 000 divisions |
| Value of the division | 1,2,5 *10 ^k gr, K=-1 ÷ +6 |
| Decimal point position, from right to left | 1..4 |
| Button ZERO range | 1 ÷ 20% F.S |
| Tracking zero for 1s | 0 ÷ 1,9e |
| Button TARE range | 0% ÷ 100% F.S |
| Maximum displayed measured value | Max + (1e ÷ 100e) |
| Tracking of load cell hanging for 20s | 0,0e ÷ 1,9e |
| Counting function | On/Off |
| Percent function | On/Off |
| Choice of working with predefined articles | On/Off |
| Choice of working with labeling printer | On/Off |
| Choice of working with block condition after the measurement | On/Off |

Technical specifications of G1602

weigh measuring by means of converting resistance change to voltage

| | |
|---|---|
| input resistance of the measuring circuit | >1 M Ω |
| output resistance of the load cell | 82 Ω - 10k Ω |
| display | Triple super red - 5 digits for weight, digit height 20,0mm, two 6-digit displays for single and total price, digit height 10 mm. |
| keyboard | 16-button keyboard with metal-made buttons |
| serial interface | RS-232C included, RS-485 optional; Channel: 9600bps, 8, N, 1 |
| measuring full cycle | < 2 s |
| measurement error | 0,5e; for 3000 divisions according to OIML R76-1 (BDS EN 45501:2001) |
| power consumption | < 2 W |
| work temperature | от -10 °C до 40 °C |
| storage temperature | от -50 °C до +90 °C |
| dimensions (H/W/D) | 170/190/70 mm |
| mounting | on horizontal or vertical surface |
| protection class | IP55, to IP67 - special order |
| own weight | 0,7 kg |
| power supply | 220VAC (+10/-15%), 50Hz(+2/-2Hz); 12V DC - special order |

Additional functions and accessories

With special order it is possible to build dosing and automation functions by means of additional controller, providing control to weigh unit and additional peripheral devices.

We also provide special software for reading measurements and controlling the scale, based on G1602. We offer different kinds of software, working on both DOS and Windows platforms. Thus, a special variant is the program for truck scales, providing ease of use .

Another options are several kinds of serial or parallel interfaces (RS-485, M-bus, etc) which are completed when special requirements are present from the client.

If you have any questions or special requirements, do not hesitate to contact us!

G5102



G5102 is a universal microcontroller device for weigh measurement. This is the simplified version of G1602 in cases, where only weight measurement is needed. Basic set-up for random tensometric cell can be made, but the options are limited, compared to G1602. The measurement principle here is based on the well-known theory of double integration. This gives the module incredible noise immunity to power supply. The standard unit comes in a high quality plastic box, with dimensions of 170x160x70mm, keyboard with four buttons and class of protection IP55. When special requirements are present, the class of protection can be up to IP67.

G5102 adjustable parameters:

| | |
|--|------------------------------------|
| Number of measurement divisions | 500 ÷ 15 000 divisions |
| Value of the division | 1,2,5 *10 ^g , K=-1 ÷ +6 |
| Decimal point position, from right to left | 1..4 |
| Tracking of load cell hanging for 20s | 0,0e ÷ 1,9e |
| Counting function | On/Off |
| Settling time | 10ms - 300ms |
| Serial channel baudrate | 1200 - 19200bps |

All other metrological parameters are non-changeable. They are:

- button ZERO range - 2% F.S.;
- button TARE range - 50% F.S., subtractive multi-tare;
- max indication - F.S. + 8e;
- initialization of zero position < 10% F.S.;
- speed of 'zero tracking' - 0,5e/1s;
- average measurements for standstill criteria - 16.

Technical specifications of G1601

weigh measuring by means of converting resistance change to voltage

| | |
|---|--|
| input resistance of the measuring circuit | >1 M Ω |
| output resistance of the load cell | 82 Ω - 10k Ω |
| display | 5-digit display, digit height 25,4mm |
| keyboard | 4-button membrane keyboard |
| serial interface | RS-232C standard, RS-485 optional; Set-up: 9600bps, 8, N, 1 |
| measuring full cycle | according to service set-up and calibration |
| measurement error | 0,5e; up to 3000 according to OIML R76-2 (БДC EN 45501:2001) |
| power consumption | < 1,5 W |
| work temperature | from -10 °C to +40 °C |
| storage temperature | from -50 °C to +90 °C |
| dimensions (H/W/D) | 170/160/70 mm (w/o connectors) |
| mounting | on horizontal or vertical surface |
| protection class | IP55 standard, up to IP67 optional |
| own weight | 1,9 kg |
| power supply | 220VAC (+10/-15%), 50Hz(+2/-2Hz); 12V DC optional |

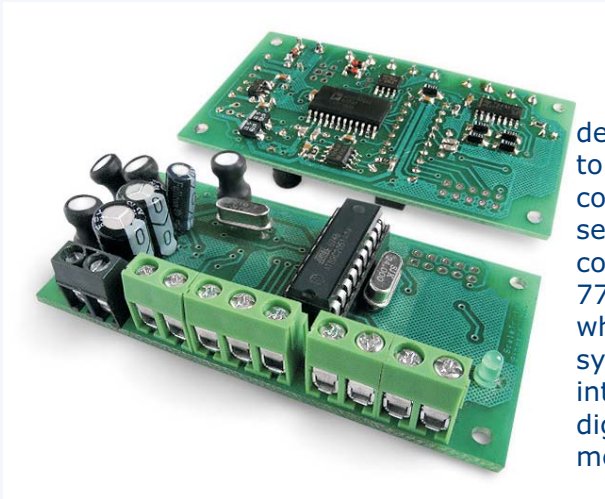
Additional functions and accessories

The idea behind this unit is simplifying, therefore - low-cost solution. For this reason there are not many additional functions or accessories except the mentioned one. Although, if a client wants and make a request, changes and improvements of the functionality are possible.

Various types of interfaces can be added, so the user to connect the scale to net of other devices, if he wants that.

If you have any questions or special requirements, do not hesitate to contact us!

SCT



Sct is a small PCB, intended to be embedded in bigger devices. The purpose of SCT is to measure signal from a load cell and to transmit continuously data to another controller or personal computer. SCT has modern sigma-delta ADC, EEPROM memory and serial RS-232/RS-485 interface. It is set and calibrated via personal computer, using GINEERS software. The size of the board are 77x50mm and is ideally suited in dosing and automation systems, where weigh measure is needed, but it is not the main part of the system. Additionally, there are four lines for controller-to-controller interface (one line on interrupt), but these can be also used for digital inputs/outputs by the user, to act when certain weight is measured. The biggest advantage of this unit is his price.

SCT adjustable parameters via RS-232:

| | |
|--|-------------------------------------|
| Number of measurement divisions | 500 ÷ 30 000 divisions |
| Value of the division | 1,2,5 *10 ^e g, K=-1 ÷ +6 |
| Calibration | 0 - 60 000 g/kg |
| Selection of switching outputs for 2 loads | |
| ID on serial RS-485 network | 1 - 63 |
| Serial channel baudrate | 4800/9600 bps |

The other metrological parameters are constants, hard coded in firmware. These are:

- 10% initial zero load;
- 2% semi-automatic function ZERO (command via interface);
- 100% semi-automatic function TARE (command via interface);
- maximum load MAX + 8e;
- zero tracking - 0.5e/1s;
- equilibrium - less than 2 ADC divisions difference in two full measurement cycles
- measurement cycle = 1.0s

Anything in firmware can be changed, if you have any suggestions - please contact us!

Software



Gineers Ltd. also develops scale software for different kinds of PC operating systems. In these computerized world it is normal solution for everybody to automate his production or measurement cycle, collecting all needed information for quick reports, print notes, bills, etc. It is essential to have good software, made by manufacturer, and to know that he will do changes for you, if needed. That is our main purpose - to give flexibility and usability to our clients.

We have several universal programs, intended to use with our scales, and a few very specific as well. We are always ready to change our programs or to write something new, if that will help client to organize better his production process.

Short description of our software, used with weigh scales

| | |
|-------------------------------------|---|
| Autoscales v1.1 and v2.0b (Windows) | intended for use with truck scales up to 100t |
| Govedo 1.2 (Windows) | special software for animal processing |
| Scale collector v1.1 (DOS/Windows) | simple collector of measurements; articles; price calculation; simple reports |
| Scale collector v2.0 (Windows) | v1.1, plus client info, detailed reports, printing of weigh notes |
| Simple scale | another variant of scale collector |
| ViVenda Labels | program for label printing. Controls the scale and labeling printer. Detailed reports |

Connection between the scale and PC is through standard serial RS-232C/RS-485 interface. Our software uses either MySQL server or self-made database files. Requirements for a PC, running our software, are not high - for the windows software the requirement is MySQL server v.4.1.12 and higher to work satisfiable.

We can easily port our programs to Linux platform.

Anything in software can be changed, if you have any suggestions - please contact us!

Series 4080

Devices from industrial series 4080 are programmable digital measurement and indication instruments. They have 4-digit LED-display (75x22 mm), with dimensions (H/W/D) 48/96/85 mm, and are intended for industrial applications. The device series includes measurement of: current, voltage, frequency, power, resistance, though it is possible to manufacture instrument for a random physical quantity (temperature, pressure, etc.). Relay contacts for remote signaling are provided.

Series 4100

Devices from industrial series 4100 are programmable digital measurement and indication instruments. They have 4-digit LED-display (94x29 mm), with dimensions (H/W/D) 144/144/65 mm, and are intended for industrial applications. The device series includes measurement of: current, voltage, frequency, power, resistance, though it is possible to manufacture instrument for a random physical quantity (temperature, pressure, etc.). Relay contacts for remote signaling are provided.

Series 5036

Devices from industrial series 5036 are programmable digital measurement and indication instruments. They have 5-digit LED-display (35x12 mm), with dimensions (H/W/D) 48/48/72 mm. and are intended for industrial applications. The device series includes measurement of: current, voltage, frequency, timers, hour counters, fuel-meter, though it is possible to manufacture instrument for a random physical quantity (temperature, pressure, etc.).

Weigh measurement

We offer standard and unique solutions in the field of weigh measuring, both intended to industrial and trade aims. We produce simple or more complex electronic weigh indicators which have many build-in functions, making them easy to use. They can also control other external equipment, to send data to a computer and many more. For further information please see our 'weight' section.

M-bus devices

M-BUS is a cheap and reliable communication protocol. It is been here quite a while in civil building instalations, for remote reading of tax and tariff devices in apartments or offices. We offer full scale instruments and software, needed to build a system for remote reading of tax instruments via M-bus interface.

Automation and process control

We make a lot of engineering work in the field of automation. Mostly we are trying to produce unique control boards for various processes in automation industry. Our firm has successfully made full automation in several factories for packaging goods.

Software

We make software among with our devices and instruments, because that is the main advantage of digital technic. The user can control processes, create database, make reports, print notes, etc. using personal computer. Although we have standard programs, we are ready to make new projects in software field to fulfil client requirements.



If you have any question or special requirements, please visit our web-site www.gineers.com, or contact us at **+359 2 975-81-05!**

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