

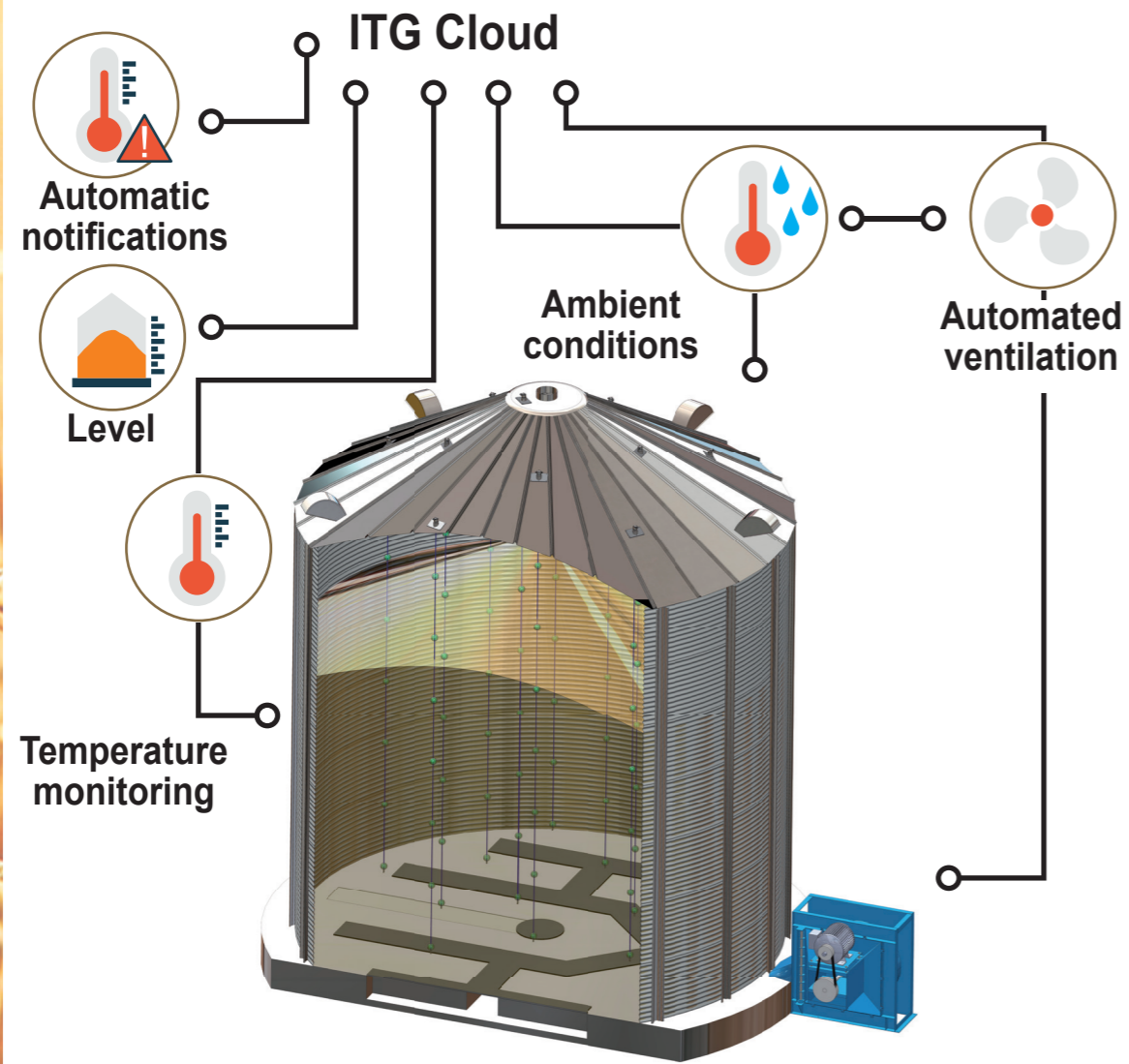


Intelligent Technology for Grainstorage

- Preserve the quality of grain
- Save up to 60% of electricity
- Reduce the risk of losses
- Increase your income



TECHNOLOGY FOR SAFETY GRAIN STORAGE PROCESS



ADVANTAGES

www.itg.bg

ITG® TEMPERATURE MONITORING SYSTEMS

We do it ourselves!

- ✓ We create and design our products;
- ✓ We manufacture the parts and components;
- ✓ We assemble and test;
- ✓ We install and maintain;
- ✓ We are at your disposal for consultations and assistance;

Our systems offer you:

- ✓ An effective solution for every type of grain storage;
- ✓ Long-life and high-quality components;
- ✓ Proven, reliable technology;
- ✓ Customized solutions;
- ✓ Reasonable prices;

- Preserve the quality of the grain in the warehouses!
- Reduce significantly the electricity costs!
- Eliminate human errors and negligence!

As a result: Increase your revenue!

We don't just offer you a product!

We offer you TECHNOLOGY that solves your problems!

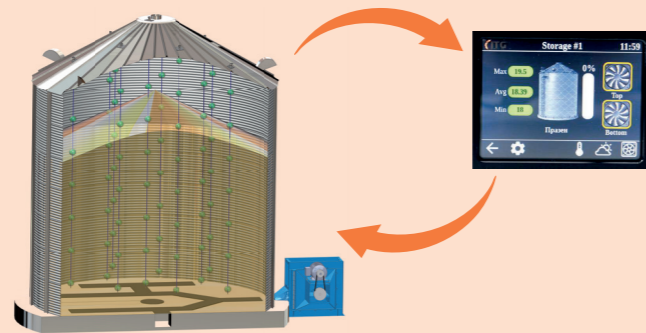


OPTIONS

ITG® Temperature Monitoring and Control Systems

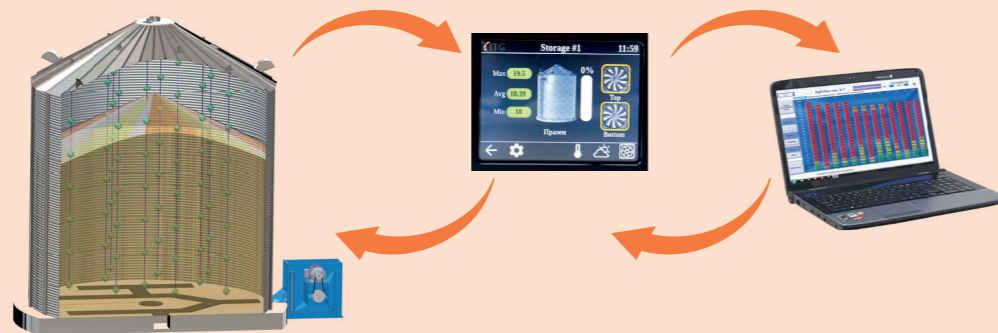
ITG® systems are suitable for any type of grain storage facility.

1. ITG® BASIC



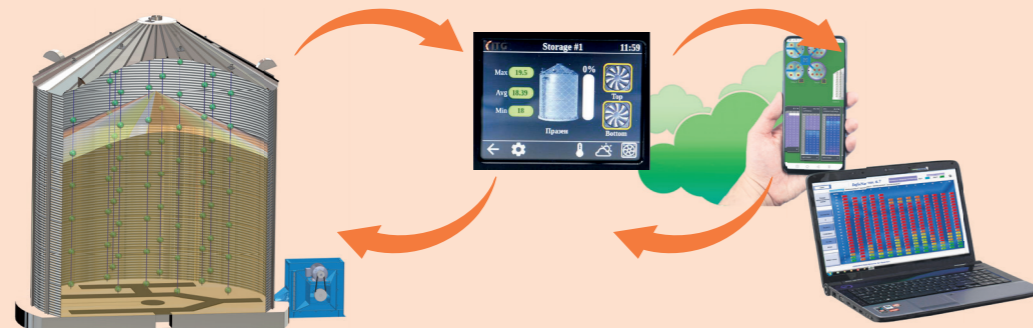
You monitor the grain temperatures in the storage facility on the control panel.
 You have the option to add ventilation control.
 This option is suitable for small farms.

2. ITG® COMFORT



You monitor the grain temperatures in the storage facility on a local computer. You receive notifications about the grain's condition and can extract various temperature reports. You also have the option to add ventilation control.

3. ITG® REVOLUTION



Wherever you are, you can monitor the grain temperatures in the storage facility using your mobile phone, laptop, or tablet through the ITG® Cloud.
 You receive notifications about the grain's condition and can extract various temperature reports.
 Additionally, you have the option to add ventilation control, either in manual or automatic mode, and control the process remotely through cloud technology.

OPTIONS

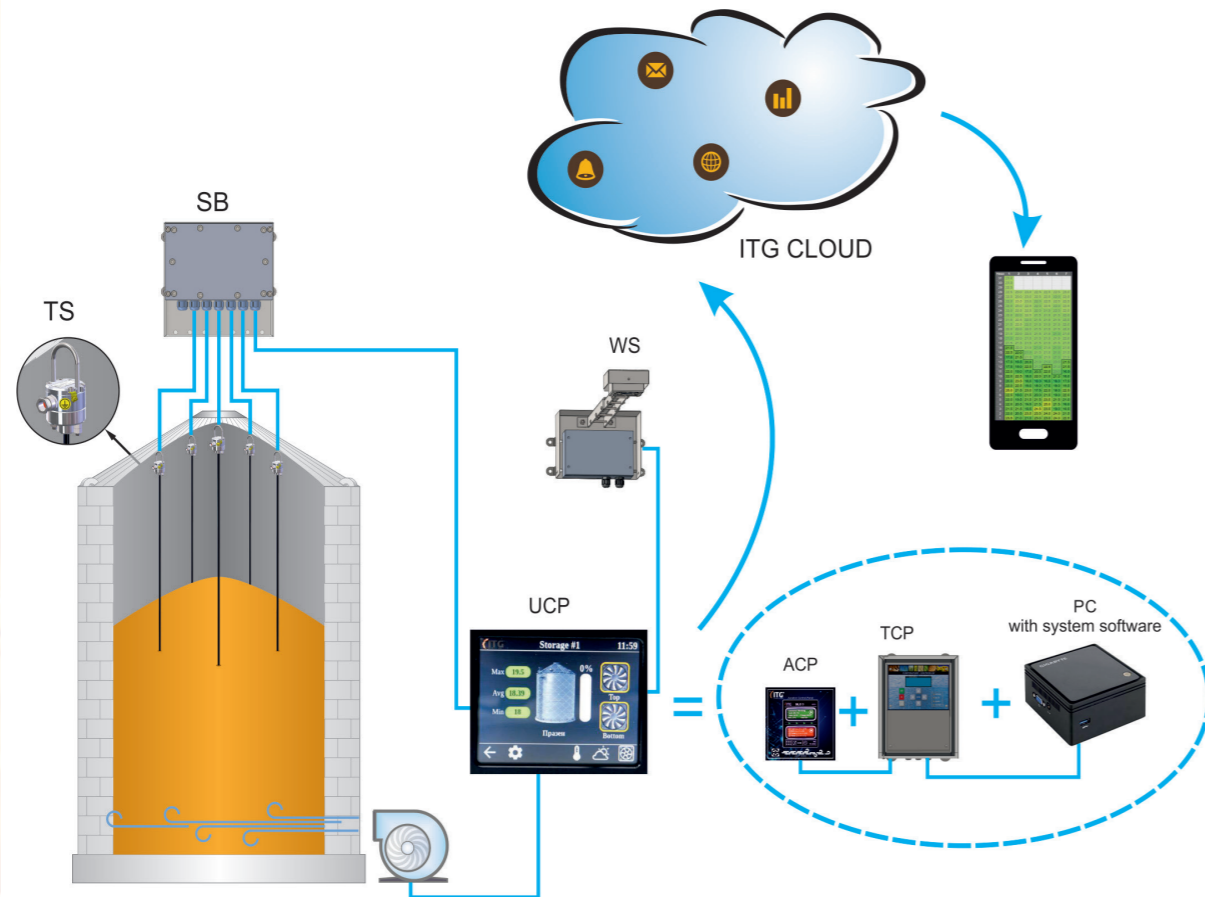
ITG® Temperature Monitoring and Control Systems

They consist of individual modules and offer various options and combinations depending on the size and characteristics of your facility and your needs.

COMPONENTS

ITG® Temperature Monitoring and Control Systems

- ✓ Applicable to any type of grain storage facility;
- ✓ Developed and manufactured by ITG®;



COMPONENTS

ITG® Temperature Monitoring and Control Systems

- ✓ Applicable to any type of grain storage facility;
- ✓ Developed and manufactured by ITG®;

TS - Digital thermoprobes with a diameter of 9.8mm and a tensile strength of 32kN, digital sensors that do not require calibration;

SB - Network communication module between the probes and the controller - solid construction with a high degree of protection - IP66, supports from 1 to 13 thermoprobes;

FCTL - Communication module between the fans and the control panel. Supports from 1 to 8 fans.

WS - Weather station - measures ambient temperature and humidity - solid construction, minimizing external environmental influences to a minimum.

Controllers with various functionalities



TCP - Temperature Control Panel



AC P - Aeration Control Panel



UCP - Universal controller with an independent operating system and Wi-Fi.



ITG® Cloud - Multi-functional, specialized software for temperature monitoring, analysis, and ventilation process control with remote access through a cloud-based platform.

TEMPERATURE MONITORING

ITG® DIGITAL TEMPERATURE PROBES

ADVANTAGES:

- ✓ Small diameter – lowers the friction and tensile strength;
- ✓ Unique double-layer self-tightening braid of the armored cable – assures strength;
- ✓ Hermetically closed – no humidity, water, dust or insects inside



Technical parameters:

diameter:	9.8 mm;
length:	from 1 up to 52 m;
max. weight:	11.9 kg;
tensile strength	32 kN /3.26 tons/;
protection level	IP 66;
temperature range	-20°C - +85°C;
measurement accuracy	±0.1°C;
distance between the sensors	1 m - 2 m;
lifecycle	20 years;

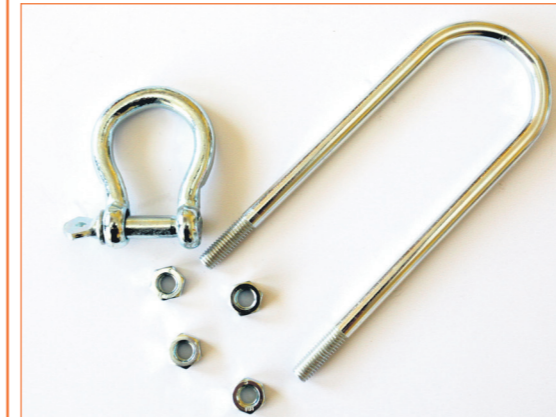
ITG® branded thermoprobes are globally recognized for their undisputed quality. They are thin yet robust enough to reduce the friction and tension forces exerted on them by the bulk grains. This, in turn, ensures safe and long-lasting operation. The design of the thermoprobe allows for the repair or replacement of electronic components.

TEMPERATURE MONITORING

INSTALLATION

ITG® systems are offered fully equipped with set of supporting, connecting and mounting elements.

Installation inside the silo/storage



U-bolt – allows various combinations and solutions



On-roof installation



Solid metal plate with protection.



Fixing elements



Securing the thermoprobes to the floor or to each other is important because it prevents their displacement during the filling or emptying of the storage facility.



TEMPERATURE MONITORING

SWITCH BOX (SB)

ADVANTAGES:

- ✓ both indoor and outdoor installation;
- ✓ High level of protection (IP66);
- ✓ Electronics protection from electromagnetic interference;
- ✓ Easy installation and maintenance;



The external network module, placed outside of the probe heads, ensures a more stable communication between the system components, as well as easier installation and maintenance



Technical parameters:

Number of probes connected from 1 to 13;
 Lifecycle 20 years;
 Protection level IP 66;
 Aluminum construction

TEMPERATURE MONITORING

TEMPERATURE CONTROL PANEL (TCP)

ADVANTAGES:

- ✓ Real-time temperature reports;
- ✓ Reliable communication and protection;
- ✓ Option for computer connection;
- ✓ Integrated service functions;
- ✓ Indoor/ outdoor installation (IP 65);



TCP displays the grain temperatures in a tabular format by probe and sensor.

Accumulates a database for a specified period.

You can track the data on the display using the keyboard arrows or connect the panel to a computer where, with the help of the specialized software, you can monitor temperatures and generate various reports based on parameters you set.



Technical Parameters:

Display 4-lined LCD;
 Protection level: IP 65;
 Max. number of sensors per probe: 32;
 Max. number of probes supported: 63;
 Max. length of the cable route: 150 m;

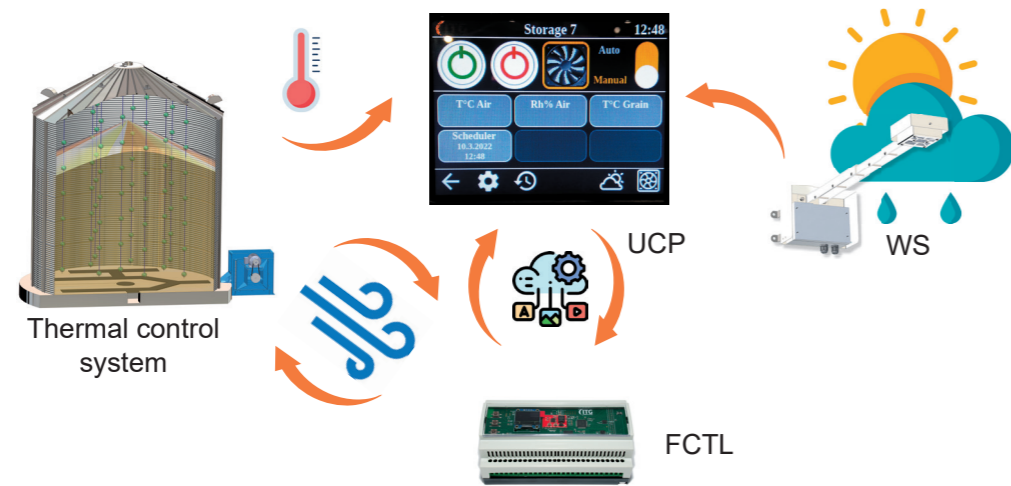
VENTILATION MANAGEMENT

AUTOMATED VENTILATION PROCESS

Effective ventilation control relies on the successful combination of several crucial factors:

- The condition of the grain in the storage facility.
- Climatic conditions.
- Human responsibility.
- Knowledge of grain storage technology.

ITG® incorporates these factors into a revolutionary technology that eliminates the risk of their unfavorable combination.



FCTL



Fan control module. It receives commands from the controller to start or stop the fans and receives feedback from the fans regarding their technical status.

One device can control from 1 to 8 fans



VENTILATION MANAGEMENT

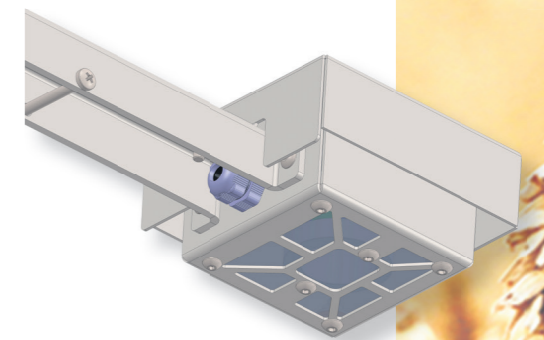
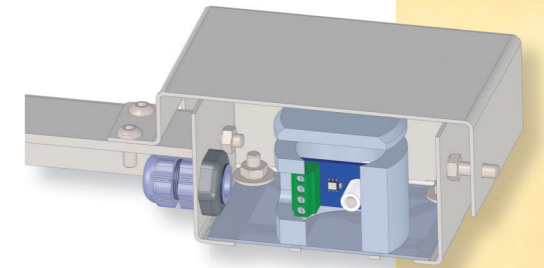
WEATHER STATION

It measures:

- ✓ Ambient temperature (°C)
- ✓ Relative humidity of the ambient environment (RH%)

ADVANTAGES:

- ✓ Designed to withstand environmental influences;
- ✓ Special sensor housing providing good air circulation and protection from direct sunlight;
- ✓ Solid construction for a long lifespan and good protection;
- ✓ Suitable for all climate zones - operational range from -30°C to +85°C



The weather station is essential for the automatic management of ventilation because it provides data on the temperature and humidity of the ambient environment to the controller. This allows the controller to determine when favorable climatic conditions for ventilation occur.

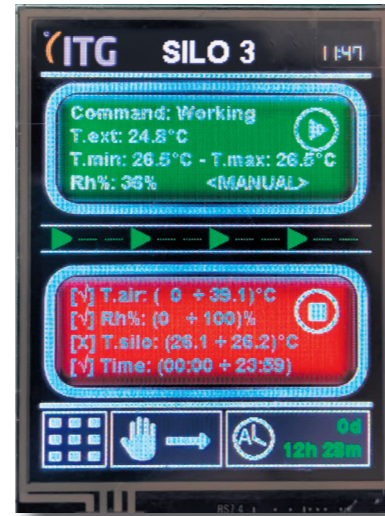
VENTILATION MANAGEMENT

AERATION CONTROL PANEL (ACP)

2 operating modes: automatic and manual
The automatic mode is designed based on the concept of „Safety First.” It provides an independent, self-monitoring ventilation process, eliminating the risk of human error or negligence.

It operates based on preset parameters:

- ✓ Tair – ambient temperature;
- ✓ RH% - Relative humidity of the ambient environment;
- ✓ Tsilo – desired grain temperature in the storage;
- ✓ Weekly hourly working schedule.



ADVANTAGES:

- ✓ Keeps complete statistics of the fan operating cycle;
- ✓ Integrated error control and alarm system;
- ✓ „Soft Start” function ensuring gradual fan startup;
- ✓ Adjustable hysteresis for activation.

Additional options:

- Connection of an emergency lamp or alarm;
- Output for an external fan status indicator;
- Connection of an exhaust fan for extracting used air.



INTELLIGENT TECHNOLOGY

UNIVERSAL CONTROLLER

Intelligent ITG Technology - Your grain storage technology assistant

Functionality:

- ✓ Saves up to 63% of energy during ventilation.
- ✓ Temperature monitoring and ventilation control combined.
- ✓ Real-time reports and statistics.
- ✓ Detailed event history and database.
- ✓ No need for a desktop computer.
- ✓ PLC communication.
- ✓ Ethernet, WiFi, Bluetooth.
- ✓ Independent operating system.
- ✓ Web-based OR local installation.
- ✓ Intelligent software.
- ✓ Touchscreen.
- ✓ Intuitive interface.

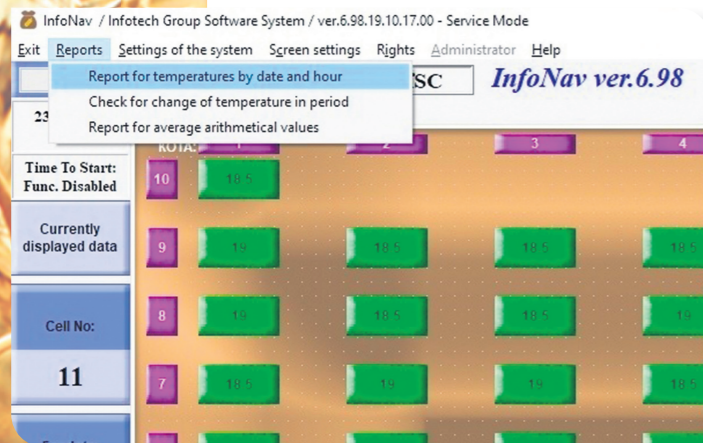


SOFTWARE



InfoNav v.6.98

Infonav V.6.98, ITG® is specialized software for local installation on a PC. The program features a refreshed interface and new functionalities.



Functionality:

- ✓ Displays real-time temperature reports for each sensor.
- ✓ Maintains a detailed database of data.
- ✓ Generates various types of temperature reports for better grain condition analysis.
- ✓ Activates graphical and audible notifications (alarms) in the presence of unfavorable temperatures.

SOFTWARE

Intelligent ITG® technology: Your grain storage technology assistant.

Preserve the quality of your grain effortlessly and increase your revenue!

• ITG® Cloud

Manage the condition of your grain in the storage facility from your mobile phone, wherever you are!

- Temperature reports
- Alarms and notifications
- Fan control



• Universal Controller (UCP)

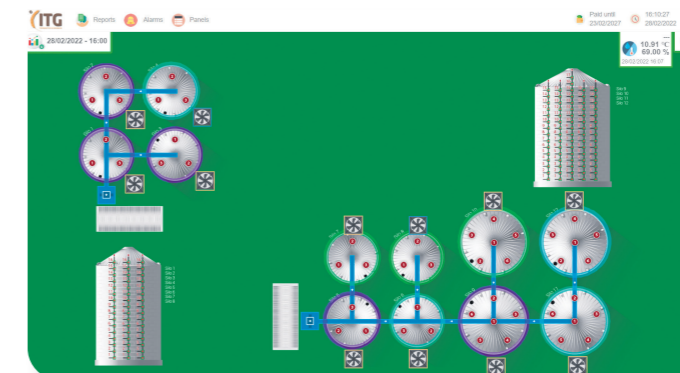
- Independent operating system
- Intelligent software
- Ethernet, WiFi, Bluetooth

• Automatic ventilation

- Self-monitoring process
- Technically based on the principle of „safety first”
- Technologically based on the science of grain storage



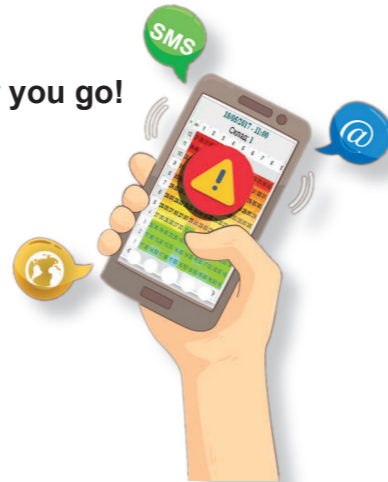
- ✓ Eliminates human error or negligence.
- ✓ Utilizes 100% favorable ventilation conditions.
- ✓ Ensures an efficient ventilation process.
- ✓ Saves up to 60% on electricity costs.



Next-generation cloud technology.

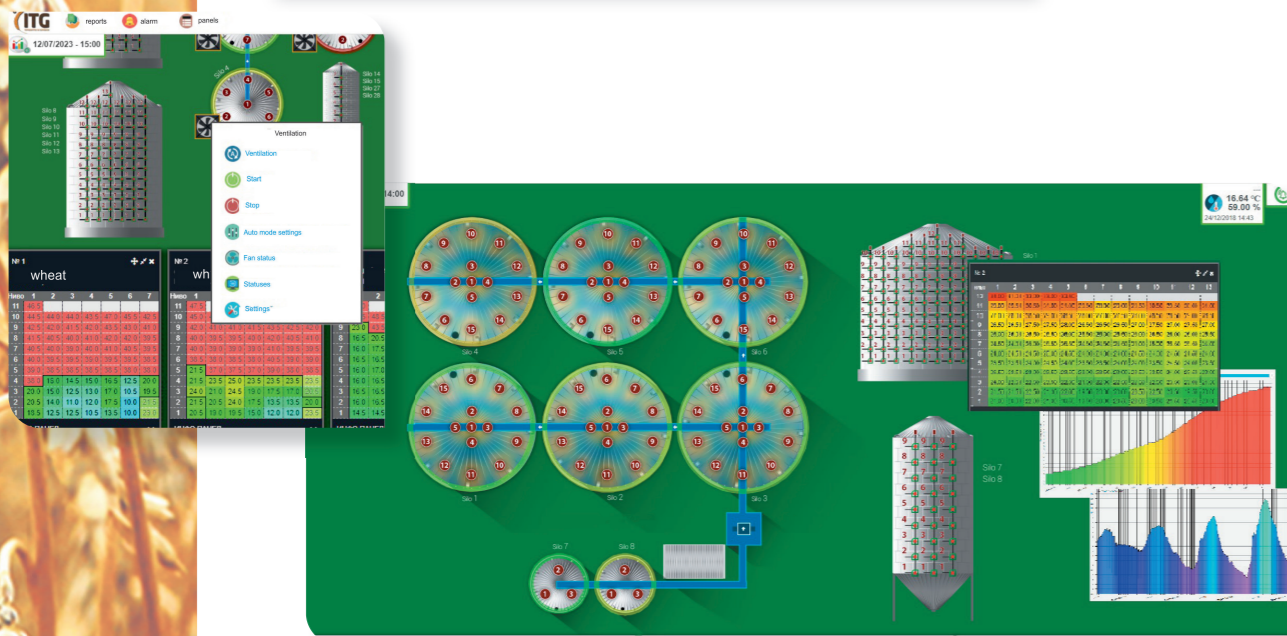
Control in your hands!

Let your tech assistant be with you wherever you go!



ITG® Cloud is developed and maintained by ITG®. The grain storage technology is embedded in the system's functionalities:

- Provides real-time temperature reports.
- Offers various temperature reports for comprehensive grain condition analysis.
- Allows remote control of the ventilation process.
- Manages the ventilation process automatically based on set parameters.
- Stores complete data statistics for temperatures, event history, technical errors, and more.
- Sends notifications and warnings.



FEATURES

✓ NOTIFICATIONS

Sends automatic notifications and alerts.



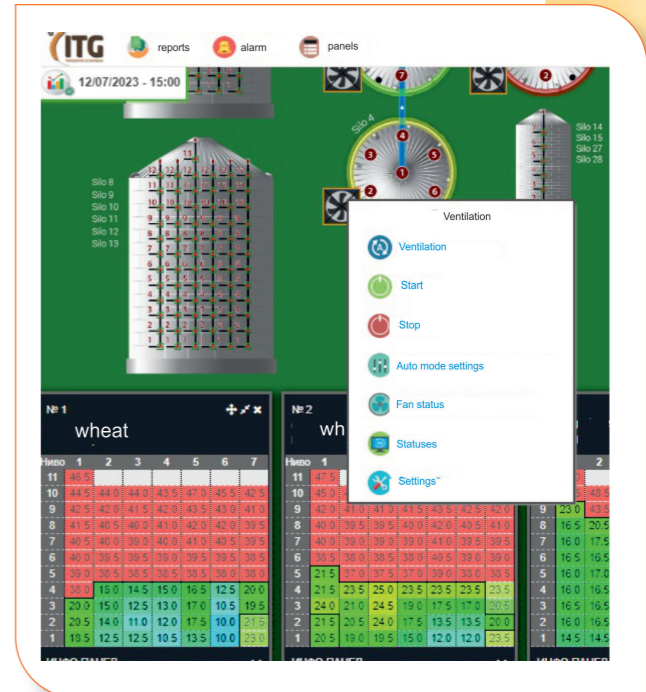
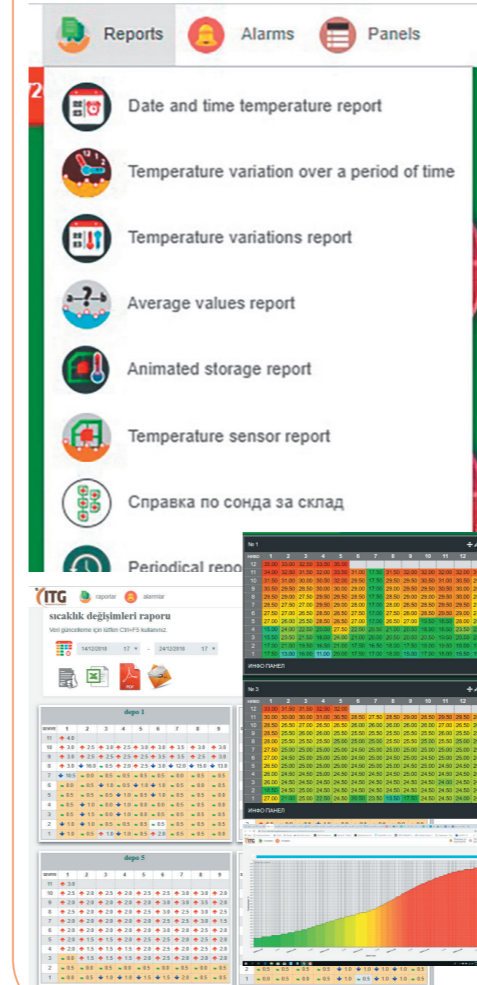
✓ VENTILATION MANAGEMENT

The system provides:

- Automatic and manual control modes.
- Comprehensive history of fan operation.
- Notifications for technical issues

✓ REPORTS

Multiple temperature reports for a comprehensive analysis of the grain condition.



SERVICES

For our clients and partners ITG® offers:

- ✓ Installation, commissioning, and training.
- ✓ Warranty and post-warranty service.
- ✓ Subscription-based maintenance.
- ✓ Remote diagnostics and support.
- ✓ Custom solutions.



PORTABLE TEMPERATURE PROBE

An excellent low-budget solution for:

- ✓ Measuring grain temperature in flat warehouses and sheds.
- ✓ Control measurements of grain piles.

Temperature range: -30°C to 110°C;
 Accuracy: ±0.75°C;
 Probe lengths: 1.5 m, 2 m, 2.5 m, 3 m;
 Digital sensors: 3 units

- ✓ Solid construction
- ✓ Waterproof
- ✓ Easy and effective





- ✓ 1997 - Founded in Sofia, Bulgaria.
- ✓ 1999 - Implementation of the first ITG[®] system for grain temperature monitoring.
- ✓ 2005 - Introduction of ITG[®] systems to the Turkish market.
- ✓ 2008 - Development of the unique ITG[®] reinforced cable for thermosondes.
- ✓ 2011 - Entry into the global international market.
- ✓ 2015 - Establishment of a 24/7 service call center and introduction of the new cloud technology ITG[®] Cloud.
- ✓ 2021 - ITG[®] introduces intelligent technology for automatic control of the ventilation process.
- ✓ 2023 - ITG[®] systems store more than 25,000,000 tons in over 60 countries worldwide.

**CONTACTS:
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