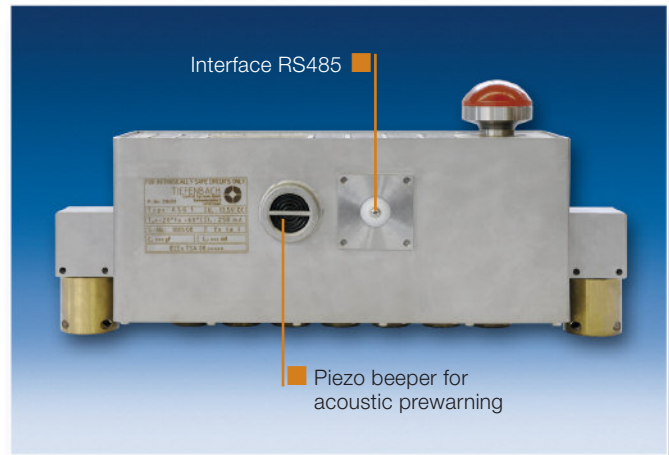
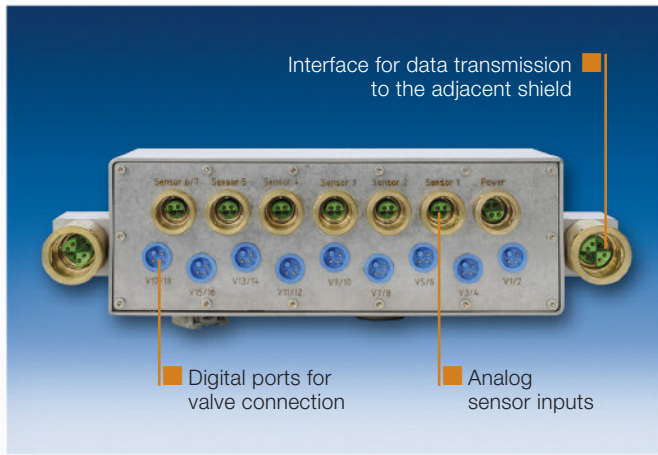




■ **TIBATRON ASG5**  
**SHIELD CONTROL UNIT**

# SHIELD CONTROL UNIT

## TIBATRON ASG 5



## FUNCTION AND DESIGN

### THE DESIGN

The economic efficiency of a hard coal mine largely depends on the efficiency of the coal producing process. The mining operation being stopped completely or even only being interrupted will result in a considerable economic loss.

One of the most important areas relevant for production within a mine is the longwall face and this includes the complete longwall equipment with the respective shield support.

Inadequacies in the control of this longwall support system generally have fatal consequences with respect to mine output and safety.

In order to ensure a trouble-free operation of the shield support system Tiefenbach Control Systems GmbH now has the latest generation of their shield support units the TIBATRON ASG5 on offer.

The control unit TIBATRON ASG5 has primarily been designed as control unit for face supports.

Thanks to its flexible design the control unit is additionally also suitable for use in other applications, as for example for tensionable drive frames, deicing plants or for the control of dump valves.

In order to cope with the harsh environmental conditions of underground coal mining the enclosure of the TIBATRON ASG5 is manufactured from rugged special high-grade steel.

### MODE OF OPERATION

A high-grade steel plate covers a keyboard with 30 tactile keys. The recesses in the plate ensures that the fingers of the operator are guided precisely to the individual keys. When pressing a key the user will get a clear tactile feedback.

The integral graphics display serves for indicating operating states and for parameterizing the control. An LED pushbutton which is visible over a long distance serves for indicating the control unit that has been activated and as optical prewarning before automatic functions start. This LED head is combined with a quick stop/support lockout switch used to power down the valve outputs.

A piezo beeper integrated in the housing bottom serves as acoustic prewarning.

The control unit can be provided with a max. of 22 digital outputs and seven analog inputs for a voltage range of 0 – 5V.

Connectors used for power supply, sensors, and adjacent connections are the SKK connectors which have been specifically developed for mining operations.

For the digital outputs, Hirschmann or Tiefenbach connectors with o-ring retention are used.

Standard sensors for shield supports are pressure sensors, normally applied for measuring leg pressures and pressures in the supply and return lines. stroke sensors for shifting rams, flipper cylinders and stabilizing rams.

Two serial interfaces are used for communication with other control units or a central face equipment control station. A special face bus interface is used in connection with the central support control unit.

A further interface can be used for extending the control system.

Thus, it is possible to connect a radio receiver in order to use a remote control or inclinometers can, for example, be connected via radio control in order to measure the inclination of the face conveyor in advance or mining direction.

Inclinometers installed in the shields are used, for example, to integrate a shield height recognition function or to carry out a convergence measurement based on caving shield angles.

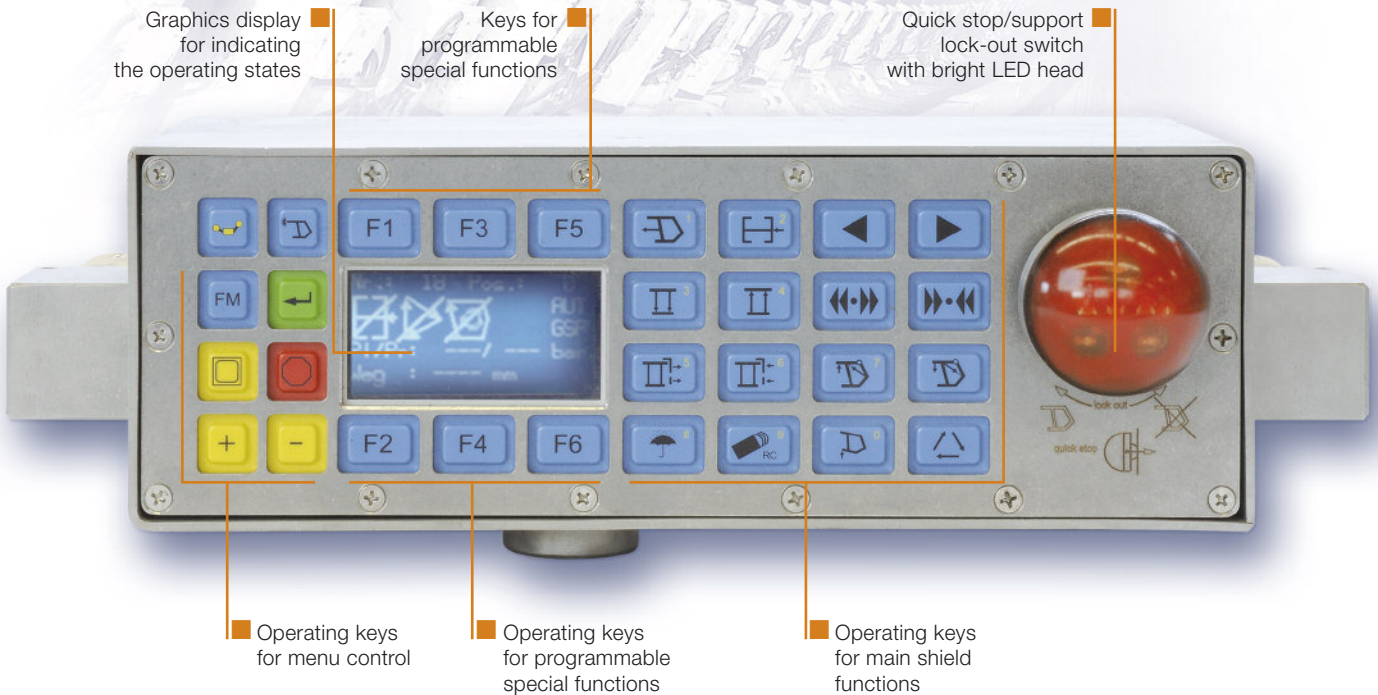
In addition to the control of supports there are numerous applications where this control unit can solve problems. An important part of electrohydraulic face control systems is the filter station. With a special software, the TIBATRON ASG5 control unit can also be used for monitoring or controlling one or several filter stations.

A large number of further applications in hard coal mining are possible and have been field-proven for years.

It is also possible to customize the keyboard configuration by means of the function keys. The current key configuration can be called up on the display at any time.

With the use of the TIBATRON ASG5 control-related problems in longwall face areas are a thing of the past.

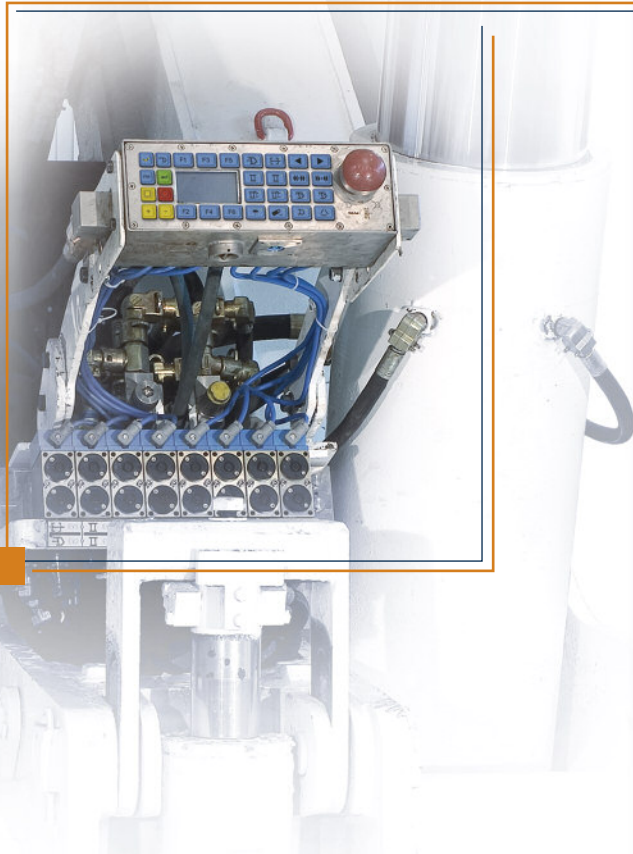




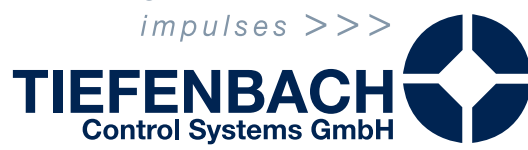
## ADVANTAGES IN THE LONGWALL FACE

- Reduced number of personnel in hazardous areas, as for example, areas with a high dust level
- Operating the support more effectively utilizing the support to full capacity by positive setting and, optionally, increasing the pressure close to the nominal pressure value by means of a Hiset pressure line.
- Optimal dust control by effective water spraying in the area of the mining machine
- Support analysis by a "Replay" function at the surface visualization computer, utilization of potential for optimization
- Automation of shield functions, as for example conveyor push and advance after the mining machine has passed

***Your efficiency  
is our measure***



We give  
impulses >>>



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