

Product information

Data acquisition system MAK 3002

With this overview we would like to show you the standard functions and their possible variants for individual system solutions.

If you are interested in additional information or in a personal discussion: Just contact us!

Controller

Central operating- and display unit with lighted graphics display. The operation essentially happens by four softkeys which are inscribed in clear text and which "guide" the operator through the programme.

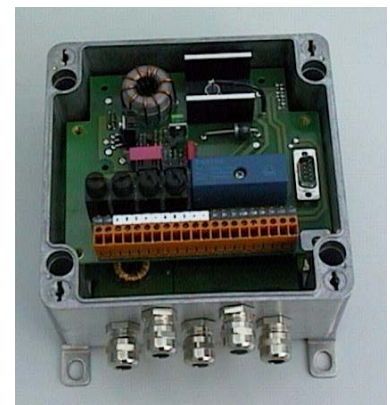
- + Graphic-capable LC-Display, illuminated
- + big and clear keyboard
- + both figures and letters can be input
- + high operation comfort



Power supply

Power supply for the system MAK 3002 with input filter for interfering signals, under-/overvoltage protection, fuse protection against short circuits.

- without counting input
- with counting input for distance recording of the milk truck
- + Information can be used for tour- / passage optimization



Supplier identification

Before the beginning of the milk intake the supplier has to be identified via its individual supplier number. All the taken data are allocated to this supplier number to be evaluated later in the dairy and in the laboratory.

Irrespective of the chosen identification system the manual input via the controller's keyboard is always possible.

Reading system for code blocks

The code block which is fixed on the milk can is read with the help of the reading head. The supplier number is transferred via cable or radio to the system MAK 3002.

- with cable reading head



- with remote reading head
+ comfortable, no disturbing connection cable



Transponder reading system (TAG)

The TAG which is fixed on the milk can is read with the help of the TAG reading head (reading distance max. 15 mm). The supplier number is transferred contact-less and without wear.

- with cable reading head TAG



- with remote reading head TAG
+ comfortable, no disturbing connection cable



- Bar code reading system

The supplier is identified with the bar code label which is glued on the sample bottle or on another carrier. A clear allocation of bar code and supplier is conditioned.



- Global positioning system (GPS)

By the evaluation of satellite data the geographic position of the supplier can be detected. The concerning supplier is automatically identified by the position data base which is stored in the controller.



Volume measurement

- Magnetic inductive flow meter (MID) with air separator in the pipe system



Data protocol

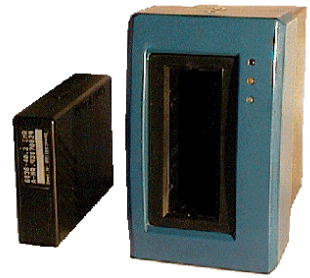
- 3 months storage (electronic data storage inside the controller)
+ fulfils the demands of homologation for operation without printer (
- Thermo printer 6761-11 (reel paper, width 79,5 mm)



Data transfer

Usually tour return data are transferred from the milk truck to the dairy. When using "tour planning" or "reply of laboratory data" even the tour schedule data - which are deposited with the dairy for the concerning truck - are simultaneously transferred to the truck by the respective medium.

- Solid state memory cartridge (SSM) and SSM station for manual data transfer



- Short distance radio for automatic, comfortable data transfer (range up to 400 m)
+ toll-free



- Global system for mobile communication (GSM)
+ big range (dependent on the individual net provider)
- charges (see GSM charges)



- Wireless LAN
+ worldwide standard (IEEE 802.11b)
+ range up to 300 m
+ toll-free



MIDAT-WIN

Analogous to the shown transfer possibilities at the truck even the appropriate components for the stationary remote station in the dairy are available.

To use the BARTEC software „MIDAT-WIN“ an usual commercial PC with Windows operating system is necessary.

MIDAT-WIN is the universal connector regarding data format and physical interface between dairy and milk collecting trucks.

Note: Not possible for Wireless-LAN!



Temperature measurement

Milk temperature during milk intake

When taking in the milk it's possible to observe if the temperature keeps prescribed limiting values. If these limiting values are not kept the milk intake will either be stopped or you will get a warning information with a report (dependent on the configuration).

Milk temperature during discharge

Even when transferring the milk from the truck to the dairy it's possible to record the temperature.

Air temperature in the sample box

The sample bottles are stored in a separate, cooled sample box. Limiting values can continuously be observed in this box, allowances are recorded.



Raw milk separation

Milk with different quality can be absorbed into separate tank segments. If the milk quality of each supplier is well-known because of tour planning data it's possible for the MAK 3002 to choose the segment with the help of an adequate timing gear. Otherwise the operator needs to manually switch the segments when the milk quality changes. The choose of the valves' positions is supervised via sensors.

Active (with automatic switch of the segments) or

Passive (with manual switch of the segments)



Sampling system ULTRASAMPLER®

With the inline sampling system ULTRASAMPLER® a representative milk branch is filled into the sample bottles already during the milk intake (dependent on the expected milk amount and the actual flow). In connection with the very small contamination plane and the integrated rinse function the sampling system ULTRASAMPLER® allows a sampling which doesn't delay the milk intake and which has almost no carry-over.

- Supplier sampling (singular sampling)
+ for testing of the milk quality in the laboratory



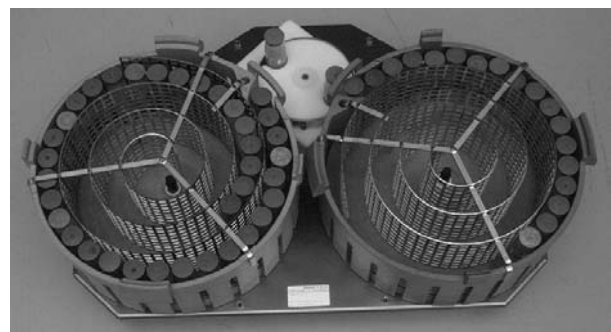
- Tank sampling (collective sampling for the complete truck content)
+ for quality assurance (dairy internal) during the intake of the raw material, test for antibiotics



Bottle drive

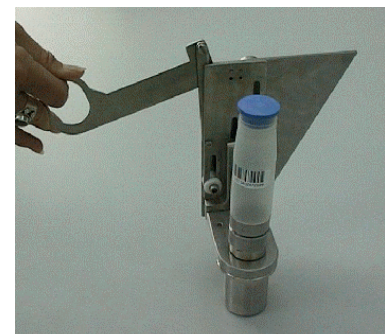
Usually the bottles are fed from a round magazine (capacity 70 bottles). The filled bottles are pushed into another round magazine. On tours with more than 70 suppliers / samples it's possible to take a second magazine in reserve with you.

- Full automatic (bottle drive by round magazines)
+ for up to 70 suppliers / tour or rather for 140 suppliers with 2 magazines



For tours with less suppliers / samples a manual bottle drive is possible as well.

- Half automatic (bottle drive with manual lifting equipment)
+ suitable for < 20 suppliers / tour



Sample bottle identification

When using the full automatic as well as the half automatic bottle drive the coding of the milk sample bottles has to be read and assigned to the supplier before the beginning of the milk intake. There are the following possibilities for the coding of the sample bottles:

- with bar code
- with transponder (TAG) + Barcode

