Milk temperature regulators
Milk tank control systems
Cleaning control systems
Tank monitoring systems
The WTS-100-2 is a combined cooling and cleaning control unit for closed milk-cooling tanks. It offers a top-quality milk cooling regulator which controls the agitator and compressor / evaporator valves. Other features include an adjustable cooling start delay and cooling time monitoring for the first milking, together with automatic after-stirring and press-button switching between target temperatures.

The complete cleaning timer controlling water valves, washing pump, heater, outlet valve etc. offers a full range of adjustable parameters. The cleaning programme is flexible and comprises up to six separate rinses, each of which can be repeated several times. If only one main wash per cleaning programme is chosen, there is an additional option to determine how many times cleaning should take place with alkaline detergent before the tank is cleaned with acidic detergent.

Water intake is by level or by time, as preferred. Outlet valves can be programmed to be “de-energised open” or “de-energised closed”. During cleaning a connected robot is switched off by the WTS-100-2’s “Cleaning active” signal. After cleaning, the robot restarts the cooling process via a digital input signal.

Also ideal as a replacement part for existing milk-cooling tanks
The WTS-100-2 is a combined cooling and cleaning control unit for closed milk cooling tanks. It offers a top-quality milk cooling regulator which controls the agitator and compressor / evaporator valves. Other features include an adjustable cooling start delay and cooling time monitoring for the first milking, together with automatic after-stirring and press-button switching between target temperatures.

The complete cleaning timer controlling water valves, washing pump, heater, outlet valve etc. offers a full range of adjustable parameters. The cleaning programme is flexible and comprises up to six separate rinses, each of which can be repeated several times. If only one main wash per cleaning programme is chosen, there is an additional option to determine how many times cleaning should take place with alkaline detergent before the tank is cleaned with acidic detergent.

Water intake is by level or by time, as preferred. Outlet valves can be programmed to be “de-energised open” or “de-energised closed”. During cleaning a connected robot is switched off by the WTS-100-2’s “Cleaning active” signal. After cleaning, the robot restarts the cooling process via a digital input signal.

WTS-100-G1

The universal cooling-tank control unit is also available pre-installed in a sturdy switchbox (IP65) for wall mounting. All necessary contactors for washing pump and heater are already built in and fully wired. All consumers are connected directly via terminals.

**Milk cooling functions**
- Two separate switching stages for controlling agitator motor and compressor
- Complete milk cooling control with automatic stirring
- Cooling start by robot possible
- Permanent stirring function
- Cooling start delay
- Cooling time monitoring
- Target temperature switchover
- Stand-by function (agitator and compressor off)

**Cleaning functions**
- Integrated washing timer
- Robot signal ‘Cleaning active’
- Water measuring regulated by time or level as desired
- Different cleaning programmes
- All running times (heating, pump, detergents) individually adjustable
- Heating temperature adjustable
- Detergent switchover ‘acidic/alkaline’
- Outlet valves programmable as “de-energised open / closed”

**Numerous monitoring functions**
- Cooling time
- Cleaning temperature
- Sensor monitoring
- Safety switch / Tap contact
- LED display of active processes
Universal tank control unit WTS-300

with integrated tank monitoring system
extended milking robot remote control
SMS alarm and remote maintenance (optionally)

Also ideal as a replacement part for existing milk-cooling tanks
Tank monitor retrofit without drilling the milk tank

Excellent cooling tank control with the most comprehensive functions for the cooling and cleaning operation - additionally with integrated tank monitor (according to the legal regulations and requirements of leading dairies).

To be controlled via separate keys
- Robot start / stop
- Disc valve opened / closed

The control is also suitable for conventional milking - without a robot.

* For the full range of functions the following might be required:

...also as complete control in the switch box

Including:
- Contactors for the rinsing pump and heating
- Agitator monitoring module
- Holder for the battery

Further information on Welba.de
Don’t do things by halves:
Save money when upgrading or converting used tanks.
Don’t just fit a separate tank monitor. Upgrade the entire control system to the most modern available. And for the same price as a simple tank monitor on its own.

Technical information:
+49 (0)2638.9320-12

The WELBA KONSOFT PC software supplied as standard facilitates easy programming and data analysis for the WTS-300. The software offers the following functions:
- Simple and convenient parameter setting
- Processing and display of tank monitor data
- Display and printing of data in tabular or graphic form
- Storage of tank monitor data (also in CSV format)
- Software update for adding new functions (future-proof)
- REMOTE CONTROL by Internet or GSM-modem
- SMS-alarm-message

Cooling and cleaning
Monitoring
Alerting
Roboter interface
Visualisation
Remote maintenance
Can be parameterized by PC

as WTS-100-2, but with:

Additional cooling functions
- Emergency cooling function in case of sensor failure
- Cooling start by robot or automatically
- Safety temperature sensor (optional)
- Time-controlled target temperature switchover (forward-looking cooling)
- Alarm in the event of rising water in the circulation line during cooling
- Button for direct operation of butterfly valve

Extended cleaning functions
- Rinsing and disinfecting function
- Different heating phases during main cleaning
- Subsequent heating function during main circulation
- Venting of cleaning line by means of cleaning pump impulses
- Protection of cleaning pump by optional pressure switch

Tank monitor function
- Real-time clock with date
- Temperature data memory for last 3 months
- Monitoring of temperature evolution during cooling and cleaning
- Complete agitator monitoring (interval, rotating, rotating in milk)
- Simple fitting (just connect)
- Comprehensive fault management - password-protected
- Generation of “Don’t take the milk” warning
- “Tank empty”: monitoring after cleaning
- Additional report via configurable alarm relay
- Water in cleaning system during cooling
- Water in cleaning system after draining
- Alarm in the event of power failure (battery protection)
- Optional alarm via text message

Robot interface (for all robot models)
- Robot start/stop button
- Different versions of cooling start delay to prevent the milk from freezing
  - time delay
  - reduced performance (interval cooling)
  - event-controlled (milk pump impulses)
  - cooling performance dependent on milk quantity
- Pre-stirring (minimises compr. switching cycles)
- Cleaning clearance by robot
- Cooling start by robot
- Separate button for pneumatic disc valve
Tank monitor TW-31 / TW-32

Welba tank monitors fulfils all statutory regulations and demands imposed by the leading dairies.

A drilling of the tank is not required!

Determined data and error messages of the last 365 days are recorded internally and can be read out at any time.

The TW-32 monitors two milk cooling tanks at the same time independently of each other. This saves costs on acquisition and installation!

WELBA tank monitors monitor fully automatically the milk temperature, the agitator function and cleaning procedures in milk cooling tanks. An operation during the everyday business is not necessary. WELBA tank monitors can easily be connected to milk cooling tanks of all manufacturers.

The installation of temperature sensors and agitator monitors is possible without additional drillings. The agitators are electronically monitored. Complex installations of revolution sensors are not necessary. Standard batteries ensure a monitoring in case of a power failure.

WELBA tank monitors distinguish between informative and critical alarms:

- Informative alarms signal the dairy farmer an incorrect operation -> action required. Thus a deterioration of the milk quality is prevented.
- Critical alarms “DO NOT LOAD” are addressing the milk tank driver. In addition to the warning-LED an external warning light, an acoustic signalling device or a dialling device can be connected. Driver and farmer decide together, whether the milk can be loaded.

Monitoring
Alarm
Visualisation
Optional accessories

Tankmonitor TW-31/TW-32

Monitoring
Alarm
Visualisation

Welba tank monitors fulfils all statutory regulations and demands imposed by the leading dairies.

For subsequent fitting to existing milk-cooling tanks

The software offers the following functions:
- Saving (also in CSV format)
- Displaying or printing tabulated or graphical comfortable parameterization
- REMOTE MAINTENANCE via Internet or GSM
- SMS alarm message

General functions
- Temperature and alarm display
- Real-time clock with date
- Temperature data memory for last 12 months
- Automatic data export to plug-in USB stick
- Monitoring of 1 or 2 agitators
- Monitoring of temperature evolution during cooling and cleaning
- Comprehensive fault management, distinguishing between informative and critical alarms, levels with password protection
- In the event of critical alarms, generation of “Don’t take the milk” warning
- Green and red lights
- "Tank empty"- report after cleaning
- Milk temperature monitoring
- Cooling time monitoring
- Agitator interval monitoring
- Monitoring of cleaning temperature and duration
- “Empty detergent canister” recognition via optional float device
- Data logging also during a power failure (requires optional batteries)
- Additional notification via configurable alarm relay
- Optional text message alarm
- Optional second monitoring sensor (redundancy)

Alarms
- Alarm in the event of agitator failure / interval / fault
- Alarm in the event of power failure
- Alarm if the milk temperature is too high or too low
- Alarm if the milk temperature is too high for too long
- Alarm if the cooling time is exceeded
- Alarm if cleaning does not proceed correctly (cleaning temperature not reached, cleaning time too short)
- Cooling fails to start
- Cleaning does not take place
- Water in cleaning system after cooling

The data analysis and presentation takes place via the PC-Software WELBA KONSOFT.

Recorded data can be read out on site via a standard USB stick or via the optional Welba remote maintenance module.

Further information on Welba.de
Milk temperature regulators

MPR-M

The tried and tested milk temperature regulators type MPR-M are used to control agitators and compressors in milk cooling systems. All parameters are adjustable via the foil keyboard. Settings and operation are extremely user-friendly.

Switchover between target temperatures, automatic after-stirring, intermediate stirring ... – even the basic MPR-M offers all the functions needed to control a milk cooling system.

MRF-M

Modern milk cooling regulator in a super-flat housing. With a fitting depth of 45 mm, it can be installed in places for which conventional regulators are too bulky.

In the case of open tanks, the button-operated continuous stirring function can be used to mix the milk once more just before it is collected.

From stand-by mode, cooling of the first milking can be started using the adjustable cooling-start delay facility.

Software functions

- Two separate switching levels for controlling agitator motor and compressor
- Complete milk cooling control with automatic after-stirring
- Continuous stirring function
- Delayed start to cool the first milking*
- Switchover between target temperatures
- Stand-by function (agitator and compressor off)*
- Automatic after-stirring with different 'intermediate stirring' functions
- Adjustable intermediate stirring times
- Cooling time monitoring*
- Automatic parameter storage in the event of a power failure
- Simple operation, tried and tested
- 'LED display of active processes
- Optimum EMV reliability
- and much more ...

* MRF-M only
The milk temperature regulators ETM-W300 and MS-5000 control compressors and agitator motors of milk-cooling equipment fully automatically. Their functional versatility also makes them ideal as replacement parts for old milk cooling control units.

Software functions
- Two separate switching levels for controlling agitator motor and compressor
- Complete milk cooling control with automatic after-stirring
- Delayed start to cooling of first milking
- Automatic after-stirring with different 'intermediate stirring' functions
- Adjustable intermediate stirring times
- Continuous stirring function without cooling
- Two freely adjustable target temperatures with push-button switchover
- Freely adjustable target values and hystereses
- Adjustable minimum action and maximum pause times for output relays
- Separate OFF button (stand-by)
- Automatic parameter storage in the event of a power failure

ETM-W300
for single-phase milk-cooling equipment

The milk temperature regulator type ETM-W300 offers innovative regulator technology in a robust and splash-proof plastic housing for wall mounting.

All functions are geared to the needs of the milk cooling process. For example, the delayed start to cool the first milking prevents the milk from freezing. Other important features available by pressing a button include switching between target temperatures and automatic intermediate stirring cycles.

MS-5000
for three-phase milk-cooling equipment

Fully automatic cooling tank control system MS-5000 for the compressor, fan and agitator motors of 3-phase milk cooling equipment with built-in power unit, with contactor and motor protection.

The robust controller is equipped with subsequent stirring, two selectable target temperatures and continuous stirring function.
Cleaning control WMS-100 for milking systems

Suitable for all milking system types

Our cleaning control unit type WMS-100 for milking systems is suitable for automatic cleaning systems in all common types of milking plant.

The device controls all plant components through a flexibly programmable and easy-to-operate cleaning programme.

Detergent injection is adjustable both by beaker and by dosing pumps (with automatic detergent management).

For a perfect cleaning result, different air injector systems are supported, to ensure optimum plug formation.

WMS-100 G1

Also fully pre-assembled in switch-box (IP65) for wall mounting. Here too, all consumers are connected directly via terminals.

Milking functions

- Control of vacuum pump and valve for increasing vacuum
- Manual start of milk pump to empty receiver

Cleaning functions

- Integrated fully automatic cleaning timer
- Water measuring regulated by time or level as desired
- Different cleaning programmes
- All running times (heating, pump, detergents) individually adjustable
- Heating temperature adjustable
- Detergent switchover ‘acidic/alkaline’ adjustable
- Automatic control of up to two outlet valves
- Rinsing boosts to increase cleaning effect adjustable

Numerous monitoring functions

- Cleaning temperature
- Pipe position (cleaning or milking position) through safety switch
- Sensor monitoring
- Level monitoring
- LED display of active processes
Replacement control unit for milking plants

for Westfalia TURBOSTAR automatic cleaning system

Replacement control unit to replace faulty timers, time relays, level regulators or mechanical thermostats in Westfalia TURBOSTAR automatic cleaning system.

With complete wiring harness for rapid installation...

Repair kit for

- mechanical switching systems
- time relays
- mechanical thermostats
- level regulators
Adaptation to individual requirements

WELBA specializes in modifying standard products according to customer’s requirements or to develop complete system solutions on a cost-effective basis. Our long years of accumulation of know-how and the compact nature of our firm provide for maximum flexibility - even for relatively small quantities. We can also offer you an individually designed front foil.

Sensors

Our standard sensors - used in all WELBA regulators - have a stainless steel sleeve with a diameter of 6.0 mm and a cable length of 2 m.

As an option, depending on the conditions of use, sensors with a brass sleeve, a diameter of 9.5 mm and a cable length of 7 m are also available.

Subject to technical modifications. Illustrations non-binding