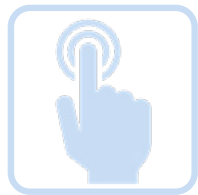


MADE IN GERMANY

# WITTE Core Command the pump control for your gear pump



# WITTE Core Command



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WITTE PUMPS & TECHNOLOGY GmbH is not only a manufacturer of gear pumps, but at the same time a system supplier offering complete solutions from a single source. The new pump control serves to expand your gear pump and can be easily integrated into your process.

The WITTE Core Command control was developed together with Blue Automation, a specialist in automation technology. This type of control is specially adapted for use with WITTE gear pumps, but can also be used with pumps from other manufacturers.

- High metering and repeat accuracy
- Batch and manual operation
- Autotuning function
- Easy integration
- Modern technology

## The best pump for your process

is not just a slogan for us, but a daily drive and motivation. WITTE PUMPS & TECHNOLOGY GmbH is an internationally active, medium-sized mechanical engineering company based in Tornesch near Hamburg.

For more than 35 years, WITTE has specialized in the development and manufacture of precision gear pumps. To meet the growing demands, WITTE engineers have developed the right control system for your process. Precisely matched to the in-house gear pumps, the control perfectly complements the portfolio. Easy handling and integration options, as well as maximum flexibility round off the features of the WITTE Core Command control.

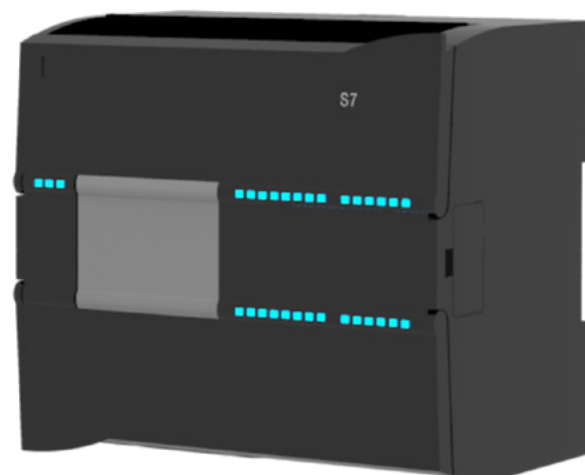


# The technology

## State-of-the-art technology according to common industry standards

Only components according to the common industrial standards are installed. The control itself is based on a Siemens S7-1200 PLC. The S7-1200 is one of the smallest PLCs in the S7 series and, as a standard component, is generally readily

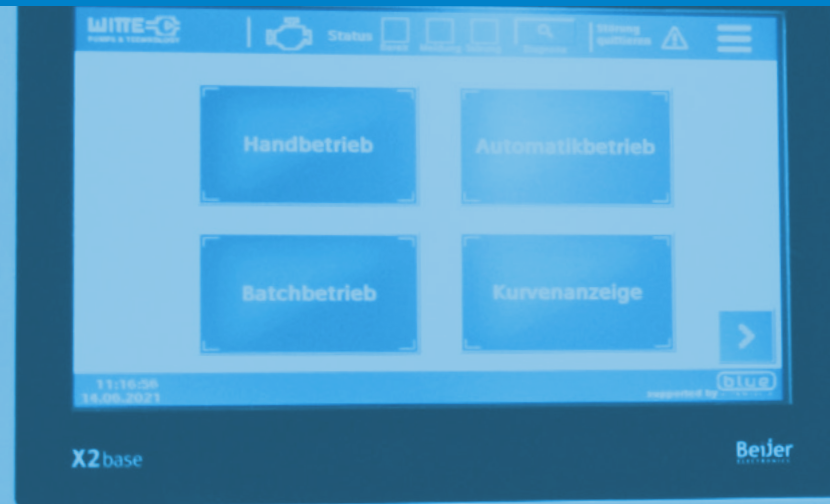
available worldwide. It is operated via a touch-sensitive 7-inch panel, which provides sufficient space to read off all the necessary information at a glance and to carry out parameterization conveniently by finger input.



The control system is housed in a small control cabinet that complies with the current industry standard. Due to its small dimensions, it can be flexibly positioned in the immediate vicinity of the pump. The control system is connected to other units such as frequency converters, volume or mass flow meters using commercially available plug-in connections that also comply with current industry standards. An uncomplicated and seamless integration is thus guaranteed and can be realized with minimal effort. WITTE not only supplies individual components, but also puts together an all-round carefree package on request.



# Dashboard



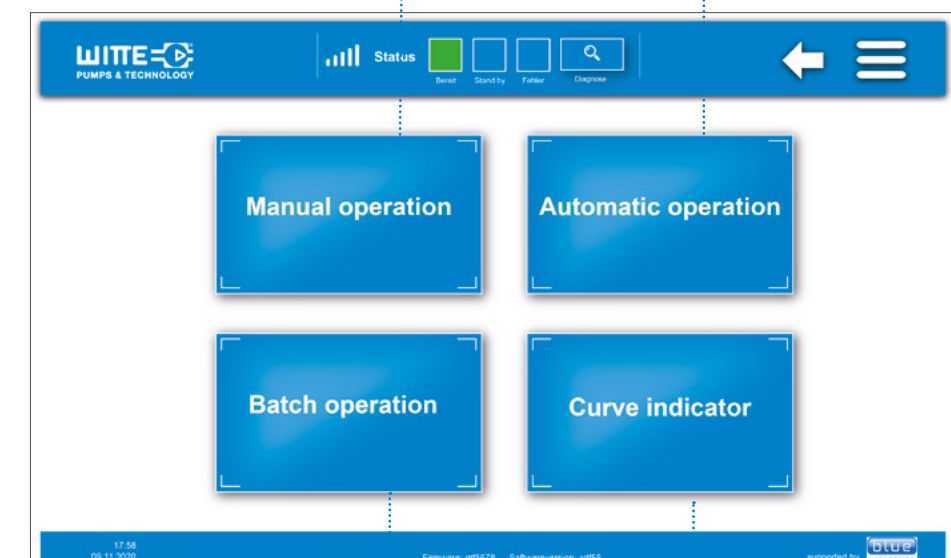
Easy handling due to a tidy and clear dashboard interface.

To keep track of all parameters and configurations, as well as the current state of the system, a tidy and clear dashboard interface was chosen. This is intuitive to use and can be provided in different languages. On the dashboard or via the user interface, all important information can be read in a good, clear and structured way.

In the "current operating status" mode, the user receives at any time information about the current pump speed, the flow rate, the output pressure or also about warning messages.

If the pump is not to run in automatic or batch mode, the operator can directly preset the pump speed in the "Manual operation" mode.

In automatic mode, all relevant parameters are defined in advance and the pump adjusts them independently.



The batch mode is self-learning, which means that the controller takes into account, for example, the overrun of the pump after shutdown and compensates accordingly.

For an exact performance overview, a curve display is available to view the history and current status.

# Features



## Control to flow with external flow sensor

Precise metering tasks can be realized with volume flow meters. This controls the speed of the motor and thereby the speed of the pump and the delivery volume.



## Control via PC/ software update

Updates or maintenance work can be carried out conveniently via a PC. The controller does not necessarily have to be removed from the operational environment.



## Batch operation

In batch mode, a previously defined quantity is conveyed. Presetting of mass throughput and target quantity. The start is initiated by an external enable signal (TTL 0..5V). Conveying stops when the target quantity is reached. Overrun compensation of the fluid quantity by automated teach-in.



## Autotuning

Tool for automated finding of the correct control parameters.



## Manual operation

Manual speed setting without modulating duty. The pump only delivers at the previously set speed.



## Datalogging

Data logging records pump speed, flow rate, and outlet pressure throughout operation.



## Optional: EX version, connection to industrial bus

The control can also be designed for ATEX zones. Optionally, it can be docked to different industrial bus systems such as Canbus or Profibus.



## Efficiency indicator

Interpretation of the operating condition or the wear condition of the pump. If the efficiency deviates from the ideal line or needs to be re-adjusted, this is an indicator of incipient wear.

## Datalogging

The control system also has a data logging function that records the pump speed, flow rate and outlet pressure during the entire operation. In this way, the history can be used to reconstruct where problems may have occurred. This is particularly important if the pump is used to run different batches. If a deviation occurs during operation, it can be precisely assigned to a batch by means of data logging and, if necessary, sorted out or checked.

## Operational safety

The system is designed for maximum operational safety and can be configured so that automatic shutdown takes place based on predefined limit values. In addition, limits for warnings can be defined so that the operator is already informed about critical operating conditions before an automatic shutdown. The shutdown function is permanently integrated in the software and can be triggered on various parameters such as pressure or efficiency.

## Error log

The integrated error log makes troubleshooting fast and convenient. If a problem exists, the user is immediately informed via the user interface and can react accordingly to the displayed error.



# Technical data



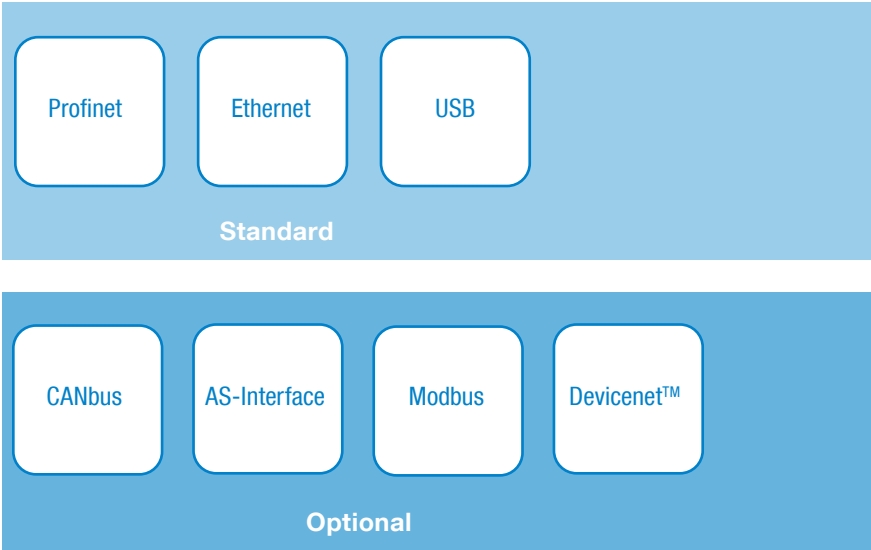
## One control, many possibilities

The configuration of the control system can be precisely adapted to the application. Integration into other systems via one of the existing interfaces is possible, as is stand-alone operation.

A wide range of parameters such as pressure or throughput can be controlled. The repeatability depends on the equipment used.

The controller uses a Profinet interface for internal communication.

## Interfaces



## Inputs

To make the controller usable for the widest possible range of applications, it is compatible with the most common input signals and can process them without any problems. For example, a scalable analog input is available for operation with a volume flow or mass flow meter. If operation in combination with a spindle or gear meter is desired, this signal can be recorded via the separate meter input. When controlling via a pressure sensor, this signal can be picked up via another scalable analog interface. An Ethernet interface also offers the possibility of processing the motor values, such as the speed, via an external frequency converter.

## Outputs

For exchange with an externally switched frequency converter, the control offers an Ethernet interface in the standard version. However, this can also be optionally extended by an analog interface.

## Precision

Repeatability and the precision of the conveyed quantity are usually dependent on the components used, such as the flow meter. The finer and more precise this is selected, the more precise the result.

## Inputs

- Flow meter:
  - 4-20 mA (scalable e.g. kg/min, l/min)
  - counter (scalable e.g. l/count)
- Pressure sensor:
  - analog 4 ... 20 mA
- Ethernet:
  - network communication
  - updates
  - configuration
- Power supply:
  - 400 V, 16 A

## Outputs

- Profinet:
  - external frequency converter
  - optional: analog 0...10 V; 4...20 mA
- USB:
  - datalogging

## Additional sensor

- 4-20 mA
- 0-10 Volt
- +24 VDC Power supply (1A max.)
- 0 VDC/GND

# WITTE WORLDWIDE



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